

FLIGHT

First Aero Weekly in the World.

Founder and Editor: STANLEY SPOONER.

A Journal devoted to the Interests, Practice, and Progress of Aerial Locomotion and Transport.

OFFICIAL ORGAN OF THE ROYAL AERO CLUB OF THE UNITED KINGDOM.

No. 352. (No. 39, Vol. VII.)

SEPTEMBER 24, 1915.

[Registered at the G.P.O.] [Weekly, Price 3d.
as a Newspaper. Post Free, 3½d.]

Flight.

Editorial Office: 44, ST. MARTIN'S LANE, LONDON, W.C.

Telegrams: Truditor, Westrand, London. Telephone: Gerrard 1828.

Annual Subscription Rates, Post Free.

United Kingdom ... 15s. 6d. Abroad ... 20s. 6d.

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EDITORIAL COMMENT.

The Aerial Defence of London.

When the First Lord of the Admiralty last week in Parliament opened his statement upon the aerial defence of London with the somewhat apologetic appeal to the Members of the House that they must remember that nobody foresaw when the war broke out the full development of aerial warfare, either on our part or on the part of our opponents, he was assuredly right in one direction—the development as brought about by the German piratical methods. As to the anticipated development of aviation otherwise in connection with the war, and the development as it is in fact, we are not so much inclined to agree. For years, previously, in the pages of "FLIGHT," forthcoming events, as they have eventuated, were foretold time and again. It was like a voice crying in the wilderness, however, for all the good it achieved with those who held the purse-strings of the nation, and who were as profoundly ignorant as they were indifferent to what was happening in regard to harnessing the world's third element—the air. There was fortunately a section of men in authority with both our Services which was ultimately to save the situation, and had a little more attention been given at

the time to the counselling of these men, and a little less thought and concern devoted to vote snatching by means of fatuous so-called social problems, Britain might have been as ready in the air, at the moment when the Kaiser took the bit between his teeth and ran amuck amongst the civilised nations of the world, as fortunately for us and the whole of the inhabitants of the globe, she was with her Grand Fleet. Now, however, is not a propitious time to indulge in recriminations, especially having in mind the great work which has been carried out through the Flying Services as they are now constituted, with promise in their steady enlargement for enormously increased utility in the future. It is at least a matter for congratulation that it has at last been recognised that something more than three pounders are essential for scaring off the Zep. pirates in their preying upon the women and children of the "fortress" of London. The reference by Mr. Balfour to the *number* of guns was somewhat beside the question in regard to the defence of London against these aerial attacks. Numbers no doubt are highly important, but it is better to have half a dozen guns of a calibre capable of getting within range of the target aimed at, when that target is capable of varying its distance to from twelve to twenty thousand feet in a minimum of time, than to have a thousand guns whose projectiles fall short of their objective by a few thousand feet or so. It was well understood years ago that the German dirigibles were capable of getting 10,000 to 12,000 feet up, and one of the first provisions of our executive should have been to provide for these conditions instead of trusting to scare guns without any real power of hitting. Whilst fully recognising that the problem of Paris is not the problem of London, we venture to think that long since more effectual means should have been in operation for keeping marauders at a safer distance from the Metropolis than up to the present has been the case. In the appointment of Sir Percy Scott there are great possibilities, and it is a satisfaction to think that since his advent matters have been very materially improved, not only in the immediate zone of England's capital, but at points in a very much wider circle, which have already given cause to the pilots of these German pirate craft to think furiously and to act upon the axiom that discretion is the better part of valour. Now as hitherto, there is not the slightest reason for, nor is there the slightest sign of, panic amongst the dwellers in London. All the same there is brought about an easier and happier feeling of security from continuous raids from above, with the knowledge that a provision has now been

made for curtailing the chances of a safe retreat back home for these night birds of prey. The submarine menace was a real one until the brains of our Navy solved the problem of dealing with it. We have every confidence that within a very short period the same will hold good in regard to the air peril against the dwellers in London, since the handling of the organisation has been placed in the hands of a man who is not only fitted to take the responsibility, but is likely to give a good account of his stewardship.

Raid Victims.

It was a wise move, we think, for the Home Secretary to issue an official description of the effects of the last of the Zeppelin raids upon London. The claims of the German official bureau are so fantastic that it would be fatuous to remain entirely silent in regard to the real results of these bombing excursions. So minutely are descriptions given in Germany of the havoc created in London, that we are inclined to think that to a certain extent the compilers of these details really believe the "news" they circulate. Such items are given without one iota of fact in them, that it leads to the opinion that their story must be founded upon something which they think they saw occur. As a fact these mistakes once more emphasise the wisdom of all mention of the localities visited by the Zeppelins being suppressed. The complete absence of any real knowledge of where they have been very largely nullifies the objects of all their elaborate and expensive excursions. No doubt most Germans profess to be more than satisfied with the results, but then they appear never to be more pleased than when they are spreading destruction amongst the innocent inhabitants of cities, so that it is not easy for the rest of the world to appreciate the trend of their mind in continuing their midnight atrocities. By way of a sample of what is believed in Germany, the following extract from the Hamburg *Fremdenblatt*, dealing with the last raid, will take a bit of beating.

"The consternation in the crowded Victoria Street when the bombs landed on the glass roof of Victoria Station was truly terrific. The railway goods depôt lay in ruins, dense volumes of smoke and flame rose up on all sides, and the adjacent Grosvenor Hotel was practically destroyed.

"Thousands of people, some quite naked, others attired merely in cloaks or nightdresses, rushed out of the houses. Terrible cries of rage, of terror, curses and entreaties resounded on all sides. Soldiers marched into the burning station, the panic-stricken people following close at their heels.

"The skies were crossed and recrossed by the beams of a couple of dozen searchlight reflectors, but the terrible monsters of the air were neither to be seen nor heard. The dull boom of guns re-echoed from afar; it was the ineffectual fire of the anti-aircraft artillery.

"Suddenly there crashed another fearful thunder-clap; again a giant bomb fell from the sky. The timid and the trembling, who did not stir from their own threshold, were advised by the fatherly police to betake themselves to the cellars, as many more Zeppelins were on the road to London.

"The flames leaping up from the roof of the railway station blazed higher and higher for more than an hour before they were extinguished, rendering Victoria Street brighter than day along its entire length, as far as the Palace of Westminster."

The above recital read side by side with the statement issued by the Home Secretary is indeed illuminating.

More Aeroplanes from Britons Overseas.

THE Secretary for the Colonies states that the Overseas Club has announced the following further gifts to the Imperial Aircraft Flotilla:—

British Empire Grain Company, Montreal, gun-mounted biplane, costing £2,250.

St. Catherine's, Ontario, biplane (presented by Major R. W. Leonard, of St. Catherine's), costing £1,500.

Air Raid Insurance, National or Otherwise.

In October, 1914, just upon a full year ago and two months after the war started, we wrote a strong editorial upon the subject of aerial bombardment and the desirability of making any resultant damage therefrom a national liability. The following extract from a leader in October will suffice to show the attitude which we took up at that time:

"For ourselves, our view of the matter, as we have already stated in a previous issue, is that, if there is any real prospect of an attempted invasion, it should be a matter for serious consideration whether the Government—which, through its various channels of information, is likely to be best informed on the subject—should not be called upon to accept responsibility for any damage that might result from such an invasion. Obviously, such damage would be the direct outcome of the national conflict, and as such ought, as far as possible, to be made good by the Government. The amount of damage likely to eventuate is in any case likely to be comparatively negligible, and the moral effect upon the general public of such an effect would undoubtedly be to inspire complete confidence, and put the little army of scaremongers into the gloomy obscurity which they deserve. Even if such a suggestion does not commend itself to the authorities, there is still another proposal they might consider, and that is, seeing that they have already taken many excellent safeguards in the public interests, notably in connection with marine insurance, in the fixing of maximum food prices, the prevention of a 'corner' in sugar, &c., they should undertake the issue of war-risk policies, covering also damage from hostile aircraft, so that the many thousands of half-crowns which are now being paid over to underwriters could be diverted to the public funds as a provision against a national risk. The whole business is a national question, and not one to be left to a few cute business men out of which to make capital."

For months afterwards we hammered away at the same idea until ultimately the matter was taken up by the Government and the present scheme instituted. We lamented at the time that the compensation had not been made a National affair, but, as half a loaf, welcomed it in good grace, as better than nothing at all. We are reciting these facts, which are so well known to our readers, just for one reason: to point a moral. During the present month a campaign has suddenly broken out in the Press, led by the *Daily Express*, having for its object the very scheme which for so long we fought. We thoroughly sympathise with the agitation up to a point, but think it is a bit late in the day to try and smash up all the machinery which has been brought into working order under the Government Bombardment Insurance Scheme. The meeting of some of the mayors and representatives of different towns chiefly concerned, on October 4th, at the Mansion House, may have some effect or be the prelude to the fizzling out of the whole affair, as judging by the attitude of many of the replies to the invitation to be present at this meeting, the support is somewhat lukewarm. In fact the whole question is, is it worth upsetting the present arrangement now? We hardly think so. The time was ripe when we were asking for action in this direction to be taken, but never a word was said then by any of the Press. It was not worth while then to them. Its significance is now recognised, and therein lies the moral. Look ahead and see things as they affect the people and the nation. Do not leave a good thing to die out for want of support until some opening appears opportune for getting in a big advertisement boom—for yourself—and the Cause, well, that is but incidental to the advertisement boom.

Government of Tasmania, biplane, costing £1,500.

Province of Nova Scotia, gun-mounted biplane, costing £2,250.

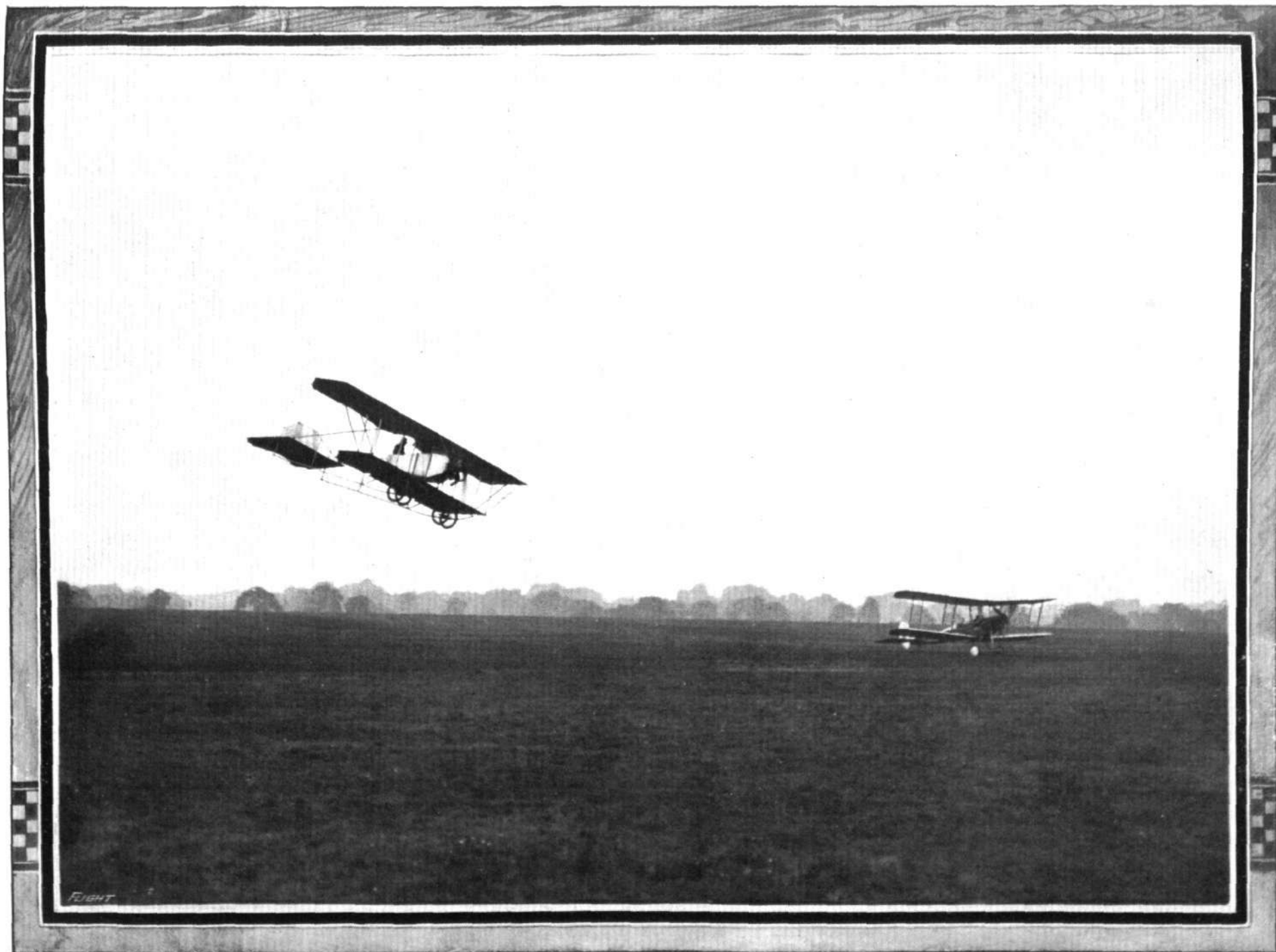
Shanghai Britons, biplane, costing £1,500.

Hawkes Bay, New Zealand, biplane, costing £1,500.

Colony of Sierra Leone, biplane, costing £1,500.

Ceylon, biplane (from the People of Ceylon, collected by the *Times of Ceylon*, to be called "A Paddy Bird from Ceylon"), costing £1,500.

SEPTEMBER 24, 1915.



Mr. J. H. Moore flying at Hendon Aerodrome on his biplane. On the ground a Blackburn B.E.2C just landed.

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FLIGHT

AIRCRAFT WORK AT THE FRONT.

OFFICIAL INFORMATION.

British.

General Headquarters, Sept. 15th.

"THREE hostile aeroplanes have been brought down within the past four days; of these two were hit by our anti-aircraft guns and fell in the German lines. The third was shot down by one of our air pilots, and fell in our lines. The hostile machine was only slightly damaged, but both pilot and observer were killed.

"During the past week there have been twenty-one air-fights over the German lines, and in eleven cases the hostile aeroplane was driven to the ground.

"On September 10th our artillery, assisted by aeroplane direction, bombarded two German observation balloons located east of Ypres; one balloon was burst, while the second was deflated and removed."

General Headquarters, Sept. 21st.

"On September 19th there were nine air combats, two hostile aeroplanes being driven to the ground in the German lines. One fell enveloped in flames, and the engine of the other was set on fire."

French.

Paris (Ministry of Marine), Sept. 17th.

"Our squadron of hydroplanes at Port Said bombarded the bridge at Chekaldere, which constitutes an important passage. A squadron of hydroplanes in the Adriatic attacked and dispersed some hostile machines, which were supported by small vessels carrying anti-aircraft guns."

Paris, Sept. 18th. Evening.

"East of Chaillon, north-east of St. Mihiel, a captive German balloon was brought down. Before St. Mihiel our artillery cut the large bridge, a bridge of boats, and three foot-bridges."

Paris, Sept. 19th. Afternoon.

"Yesterday evening a German anti-aircraft battery was put out of action to the east of St. Mihiel."

Paris, Sept. 19th. Evening.

"Near St. Mihiel, a German aeroplane, surrounded by our shrapnel fire, and attacked with machine-gun fire by one of our machines, dived suddenly into its lines."

Paris, Sept. 21st. Afternoon.

"Last night one of our aeroplanes bombed the junction at Amagne Lucquy, east of Rethel."

Paris, Sept. 21st. Evening.

"A squadron of nineteen aeroplanes this morning bombarded the station at the Bamsdorf junction east of Morhange. One hundred shells were dropped on the buildings and stationary trains, which were very seriously damaged."

Italian.

Rome, Sept. 15th.

"Enemy aeroplanes appeared over Tolmezzo and Plezzo, and Caporetto basins. Another air squadron

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Lord Kitchener's Tribute to French Aviators.

IN his review in the House of Lords on the 15th inst. of the progress of the war Lord Kitchener said:—

"Our Ally's aircraft have been particularly active. They have carried out numerous effective raids on a large scale, penetrating far into hostile territory."

French Military Aviation.

INTERVIEWED last week by the *Matin* on his appointment as Under Secretary for Military Aeronautics in France, M. René Besnard said:—

"French aviation has heroically justified the confidence that was

attempted a raid on Udine, but was attacked by our machines, driven back, and pursued to the Carso.

"Enemy encampments at Nabresina and Komen were successfully bombarded by our aeroplanes."

Rome, Sept. 16th.

"An enemy aeroplane made yesterday a flying incursion in the Vicentino, throwing bombs from a great height upon Asiago and eight on Vicenza. Only very slight damages and a few cases of injuries to persons are reported."

Rome, Sept. 17th.

"The news of serious damage caused by our raid on September 14th against the enemy defence works on the positions dominating the Presna basin (Genoa Valley) is confirmed.

"Aerial reconnaissances had confirmed the presence of numerous trains in the stations of Nabresina and Santa Croce along the railway to Trieste. The line was bombarded and damaged by one of our aviators in the neighbourhood of Gabrovica.

"An aviator dropped a bomb on our hospital station at Begliano. Fortunately, no damage was done."

Rome, Sept. 19th.

"Our dirigibles made an incursion on the enemy's aviation camp at Aisovitz, where they dropped forty bombs. The crossing and viaduct of the Nabresina Railway were also bombarded. Our dirigibles returned to our lines undamaged.

"Enemy aircraft, on the other hand, dropped bombs on undefended towns, such as Asiago and Bassano. There were only a few wounded among the population and slight material damage. No soldiers were hit."

Serbian.

Nish, Sept. 19th.

"On Saturday morning four enemy aeroplanes were sighted coming from the direction of Mt. Oliona, the highest summit north-west of Orsova, and flying down the Danube in single file. One of them was hit by our guns and returned, while the others for a long time flew over Rumanian territory, and then apparently made off towards Bulgaria and Turkey.

"On the same day there was an artillery engagement in the direction of Orsova and Tekia."

German.

Berlin, Sept. 18th.

"Hostile ships which appeared off Dunkirk were attacked by our aviators and a destroyer was hit."

Austrian.

Vienna, Sept. 20th.

"One of our airmen dropped bombs on the railway station and camp of Arsiero."

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placed in it by those who have fought so hard for it. Why is it that there are among those some who, like Senator Raymond, to whom my memory pays tribute as a glorious soldier and heroic victim, cannot be with us to witness the development of the work which they loved to the extent of the greatest sacrifice of all? It is with the memory of the fine example that he gave, and others are giving every day, that I wish to act with all my strength and soul to organise and collect without cessation or relaxation the manufactures and the matters requisite for the air service. This is the reason for my appointment, and I shall fulfil my duties, for I am sure that in aircraft we find an instrument essential to our certain victory."

THE ZEPPELIN "X" RAIDS.

"The following description of some of the effects of the last Zeppelin raid in the London district has been drawn up by an impartial observer at the request of the Home Secretary, and is authorised for publication.

"While it is absolutely necessary, in the interests of public safety, strictly to maintain the rule that no unauthorised accounts should appear, the real character of these outrages may be the better understood by a collection of incidents, each of which has been verified on the spot, and is vouched for by the authorities as accurate.

"The Home Secretary takes this opportunity of stating explicitly that the total casualties resulting from these air raids are in all cases correctly stated, and are based on exhaustive inquiry by the police.

"In a letter which he addressed to a correspondent some weeks ago, the First Lord of the Admiralty set forth the reasons which prevented His Majesty's Government from disclosing the exact localities in which damage had taken place in the various Zeppelin raids. These reasons remain valid, and there is no intention to depart from the rule which secures that no information can be made available for the enemy, either in regard to the route he has taken, or the places or buildings on which he dropped his bombs. The experience of the raids of last week, combined with the German official reports on them, demonstrate that the commanders of German aircraft are often grossly in error as to their movements, and have no means whatever of estimating the effect of their promiscuous bombardment either materially or morally. In every case where damage has been caused it is private property that has suffered, and in most cases this private property has been of the small residential kind. Almost all the unfortunate people who have been killed have not only been non-combatants, but non-combatants of a kind which it has been hitherto the honourable practice of civilised warfare to exempt from attack, that is to say, women and children, small shopkeepers, and working men, the sacrifice of whose lives can effect no military purpose whatever, either morally or materially.

"Folly and Futility.

"The folly and futility of the raids which took place last week can be well imagined when it is remembered that the London district, which may be taken for convenience as the area administered by the Metropolitan Police, is just short of 700 square miles in area. It is by hastily dropping at random in the dark certain explosive and incendiary material somewhere on this enormous surface that the enemy professed to be accomplishing some important military purpose. In point of fact no public institution of any kind was hit, nor any power station, nor arsenal. No damage was done which affects the use of any building connected directly or indirectly with the conduct of the war. It is true that two hospitals narrowly escaped damage, but it is only fair to say on behalf of the officers of an army which has done its best to destroy the cathedrals of Belgium and France that up to the present they have only succeeded in hitting one church. So far as the moral effect of the raid was concerned, it is to be feared that from the standpoint of Berlin it was a complete failure. If Count Zeppelin himself accompanied the raiding aircraft (as has been reported from Holland), he will be disappointed to learn that only a minority of the vast population of London was aware of the presence of his airship at all, and that amongst those who heard the guns fire or saw the Zeppelin the feelings everywhere aroused were of interest and curiosity rather than of fear.

"Incidents Contrasted.

"That London and its suburbs as a community faces calmly the murderous efforts of the raiders is in no way a mitigation of the callous and purposeless brutality of their action, or of the tragedies which have followed. Here are a few pictures of the effects accomplished by the officers and crew of the last airship which visited the London district.

"I. Somewhere in the area of London you can go to the corner of a little street; this one has a publichouse at the corner. Outside it on Wednesday evening last week after the place was closed a man and a woman were talking. The woman went off to buy some

supper at a neighbouring shop; the man stood there to wait for her, and while he was waiting there fell at his feet the first of the explosive bombs. It killed the man outright; it blew pieces of paving-stone on to the surrounding roofs, it blew in the front of the public-house, reducing the stock to a mere mass of broken glass, over which still floats an indefinable odour of assorted forms of alcohol; it took off the top of a grand piano on the floor above, twisted the iron bedsteads, injured a woman who was sleeping there, and reduced what had been the carefully kept living rooms of a small family to a mass of soot and dust and plaster and broken glass. In what conceivable respect did it contribute to the progress of the war?

"II. In another part of the area over which the airship passed, there is a big block of workmen's dwellings—places where men live who are away at their trades all day, and often all night, and which day and night are crowded with children. A bomb dropped on the roof of one of these, and right under the roof was a little flat in which four children had been put to sleep. Two of them after being put to bed had got up surreptitiously to make tea in an adjoining room; you can see the bed that they left now, a mass of blackened and charred sheets with the mattress torn to pieces. They escaped by a miracle, but in the small bedroom next door to them the other two children were killed in an instant. These buildings are strong, and the bomb did not penetrate far; you would hardly notice the damage to the roof if you pass it in the street. That was all that was happening when the captain of the German aircraft professed to think he was visiting the docks and vitally damaging the Port of London.

"III. In another place a bomb dropped through the roof of a stable yard; it was an incendiary bomb, and it set on fire a motor car on which it fell. The stableman and his wife, in spite of the fire, which was immediately serious, set out to rescue the eleven horses which were in the stable behind the fire, and they were carefully taken out one by one and let loose in the street. A dog which was kept to guard the premises was also carefully rescued, so was a caged bird kept on the first floor above the fire, though whilst she was bringing it down the stableman's wife was blown off her feet on the stairs by the blast of an explosive bomb which fell in a neighbouring courtyard. The only casualty in this case was a bantam cock.

"Poor Children Killed.

"IV. In such a case as the last the futility of the enemy's attack was merely ridiculous; in others, it was tragic. Somewhere in the vast area of London's suburbs there is a little block of houses standing almost by itself and divided up into small flats. On the ground-floor there was sleeping a widow, her daughter, aged 18, and a young man whom they kept as a lodger. On the first floor was a family with three children, two of them girls; and on the second floor a working man and his wife with five children, four of them girls and one a boy. The bomb dropped squarely on the roof of the house. As the labourer and his wife who were on the second floor described it, the whole partition wall beside their bed gave way and disappeared; the man pushed his wife out into the centre of the room, and went off to find his children. Two of them, who slept in the room under the spot where the bomb fell, had vanished with room, bed and everything, and their bodies were found two days later under the debris of the house. Of the others, the boy, aged eight, ran for safety to the staircase, which was blown away, and in the dark fell down into the hole where his sisters' bodies were buried in the ruins. Of the first floor inhabitants two were missing altogether, and their bodies were subsequently recovered. Of the ground floor, where apparently the worst effect of the explosion took place, it is sufficient to say that part of the body of the man who occupied it was found 150 yards away.

"V. A bomb dropped in the street blew in the front of a shop, but spent the main force of its explosion on a passing motor omnibus. There were twenty people on board, including the driver and conductor. Nine of them were killed and eleven injured, amongst the injured being the driver, who had both his legs blown off, and died shortly afterwards in hospital.

"These incidents alone account for nearly half the deaths which have been caused. They will suffice to show what is the real measure and nature of the success which has attended the enemy's attack on the London area.

"In human life and limb the net results of the week's raids in the London district were 38 killed or died of wounds, and 124 injured.

"It ought not to be omitted from mention that two policemen and one Army Service Corps man appeared amongst the casualties; otherwise no person in uniform was either killed or injured."

THE BRITISH AIR SERVICES.

UNDER this heading are published each week the official announcements of appointments and promotions affecting the Royal Naval Air Service and the Royal Flying Corps (Military Wing) and Central Flying School. These notices are not duplicated. By way of instance, when an appointment to the Royal Naval Air Service is announced by the Admiralty it is published forthwith, but subsequently, when it appears in the LONDON GAZETTE, it is not repeated in this column.

Royal Naval Air Service.

THE following appeared among the Admiralty announcements of the 16th inst. :—

Temporary Flight Sub-Lieut. G. H. Beard transferred to Permanent List of R.N.A.S. Sept. 14th.

The undermentioned Probationary Flight Sub-Lieutenants have been confirmed in rank with original seniority, and re-appointed to "President," additional, for R.N.A.S., to date as follows: R. A. Reid (temporary), March 25th; J. O. Davis and W. H. E. Campbell, both May 7th; G. G. Ommaney, D. Gill, P. C. Douglas (temporary), H. F. Mills (temporary), and O. H. Butcher (temporary), all May 28th; W. H. S. Sharpe, B. Gregg, and S. Bell, all June 26th; H. S. Bompas, R. W. Lane, and J. H. D. Grant, all July 5th; J. Wann, T. F. Morris, W. P. D. Scott, and H. D. Hyde (temporary), all July 7th; E. A. O. Audljo-Jamieson and S. O. Smith, both July 8th; A. T. Moore, July 13th; N. E. Stirling, Aug. 1st; M. G. Gill, Aug. 7th; A. C. B. Gedder, L. Radmore, C. R. Carr, and P. Laing, all Aug. 10th.

Temporary Lieut.-Commander (R.N.V.R.) S. Hedley entered as Acting Flight-Lieutenant, for temporary service, with seniority of September 14th, and appointed to "President," additional, for R.N.A.S. (temporary commission as Lieutenant-Commander terminated).

Acting Warrant Officer (2nd Grade) S. R. Gellett to "President," additional, for R.N.A.S. Sept. 15th.

C. C. Hore granted temporary commission as Lieutenant (R.N.V.R.), with seniority of Sept. 15th, and appointed to "President," for R.N.A.S.

The following appeared among the Admiralty announcements of the 17th inst. :—

Temporary Sub-Lieut. (R.N.V.R.) R. H. Horniman entered as Probationary Flight Sub-Lieutenant, for temporary service, with seniority of Sept. 16th, and appointed to "President," additional, for R.N.A.S.

The following appeared among the Admiralty announcements of the 18th inst. :—

The following have been entered as Probationary Flight Sub-Lieutenants, for temporary service, with seniority of Sept. 17th, and appointed to "President," additional, for R.N.A.S.: R. E. Darnton, H. Field, and H. J. T. Saint.

E. S. Hunt granted temporary commission as Sub-Lieutenant (R.N.V.R.), with seniority of Sept. 17th, and appointed to "President," additional, for duty with R.N.A.S.

The following appeared among the Admiralty announcements of the 19th inst. :—

Lieut.-Commander (R.N.V.R.) I. Fraser entered as Acting Flight-Lieutenant, for temporary service, and appointed to the "President," additional, for R.N.A.S. To date Sept. 15th.

F. A. R. Malet entered as Probationary Flight Sub-Lieutenant,

for temporary service, and appointed to the "President," additional, for R.N.A.S. To date Sept. 18th.

Temporary Sub-Lieut. (R.N.V.R.) A. Handley entered as Probationary Flight Sub-Lieutenant, for temporary service, and appointed to the "President," for R.N.A.S. Temporary commission and appointment as Sub-Lieutenant (R.N.V.R.) terminated. To date Sept. 17th.

The following appeared in the *London Gazette* of the 21st inst. :—

Sept. 17th.—*Royal Marines*.—Major and Brevet Lieut. Col. (temporary Col.) Frederick H. Sykes, 15th Hussars (Wing Commander Royal Flying Corps), is granted a temporary commission as Colonel Second Commandant. July 24th, 1915.

Temporary Col. Second Commandant Frederick H. Sykes, R.M., is graded as temporary Wing Captain, in command of Air Service Units. July 24th, 1915.

Royal Flying Corps (Military Wing).

THE following appeared in a supplement to the *London Gazette* issued on the 15th inst. :—

Flying Officers.—Aug. 26th, 1915: Second Lieut. G. W. Withington, Norfolk Regt., and to be seconded; Second Lieut. F. Hudson, Special Reserve. Second Lieut. J. A. W. Bourne, S.R.; Aug. 30th, 1915. Second Lieut. R. G. Burder, A.S.C., S.R.; Sept. 1st, 1915.

The following appeared in the *London Gazette* of the 17th inst. :—

Squadron-Commander.—Capt. Daniel G. Conner, R.A., from an Equipment Officer, and to be temporary Major whilst so employed. Sept. 2nd, 1915.

Flying Officers.—Second Lieut. Edward P. Plenty, Manchester Regt., and to be seconded; Aug. 30th, 1915. Sept. 4th, 1915: Lieut. D. M. King, Reserve of Officers; Second Lieut. A. R. Tillie, Cameronians (Scottish Rifles); Second Lieut. L. Moss, A.S.C.

Supplementary to Regular Corps.—Second Lieut. (on probation) John A. W. Bourne is confirmed in his rank.

To be Second Lieutenants (on probation): Walter D. M. Bell; Aug. 15th, 1915. Herbert A. Johnston; Aug. 27th, 1915. Cecil F. Pittman; Sept. 1st, 1915.

The following appeared in a supplement to the *London Gazette* issued on the 18th inst. :—

Supplementary to Regular Corps.—The appointment of Lancelot E. M. Hayes to a Second Lieutenantcy, notified in the *Gazette* of Aug. 16th, 1915, is cancelled as from Sept. 4th, 1915. Cecil H. Morgan to be Second Lieutenant (on probation). July 7th, 1915.

The following appeared in a supplement to the *London Gazette* issued on the 20th inst. :—

Sergt.-Major W. Thomas to be Quartermaster, with honorary rank of Lieutenant. Aug. 29th.

Supplementary to Regular Corps.—Second Lieut. (on probation) C. W. Wilcox confirmed in rank. To be Second Lieutenants (on probation): H. B. T. Childs; Sept. 1st. T. W. Webb; Sept. 6th. F. W. Day to be Second Lieutenant (on probation). Aug. 17th.

The following appeared in the *London Gazette* of the 21st inst. :—

Deputy Assistant Director of Aviation.—Capt. (temp. Major) P. W. L. Broke-Smith, R.E. March 26th, 1915.

Supplementary to Regular Corps.—Second Lieut. (on probation) William N. M. Dunkley is confirmed in his rank.



THE ROLL OF HONOUR.

THE Secretary of the Admiralty has announced the following casualties :—

Under date September 12th :

Killed.

Flight Sub-Lieutenant Macfie Keith Johnston.
Flight Sub-Lieutenant James Morrow Alexander.

Under date September 15th :

Injured.

Flight-Lieutenant R. Hilton Jones, R.N.
Flight Sub-Lieutenant William Croucher, R.N.

Under date September 18th :

Died.

Flight Sub-Lieutenant William Croucher, R.N.

Previously reported Missing, now reported Killed.

Flight Lieutenant David Keith Johnston, R.N.

The following casualties in the Expeditionary Force have been reported from General Headquarters :—

Under date September 12th :

Missing.

Captain T. W. Mulcaby-Morgan, R. Irish Fus., attached R.F.C.

The following casualty in the Indian Forces has been reported from General Headquarters :—

Previously Officially reported Missing, now Unofficially reported Killed.

Lieutenant E. C. Braddyll, 10th Lancers, attached R.F.C.

The following casualty in the Indian Forces has been reported from the Persian Gulf :—

Missing.

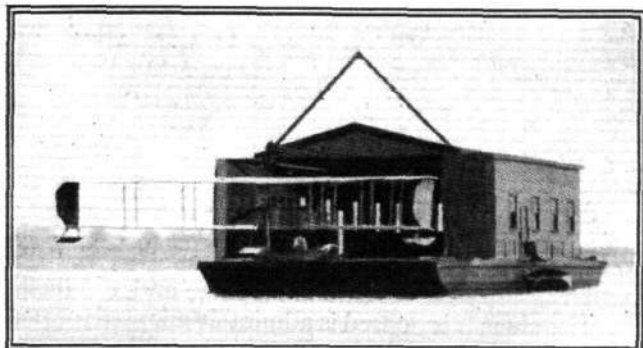
Captain B. S. Atkins, 11th Rajputs, attached R.F.C.

WATERPLANE SPORT IN AMERICA.

MR. ASTOR'S BURGESS-DUNNE SEAPLANE AND ITS FLOATING HANGAR.

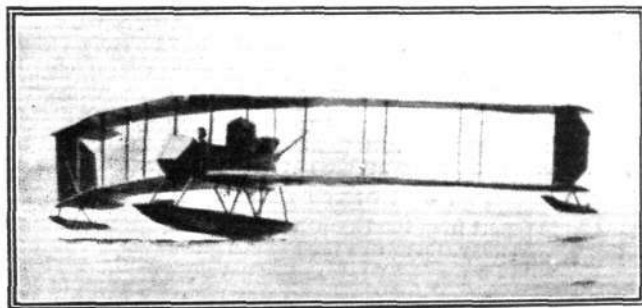
SEAPLANING as a sport is rapidly increasing in vogue among our American cousins, thanks chiefly to wealthy enthusiasts such as, to mention a few, Verplank, McCormick, and Astor. While the two former have

leave the surface easily and without any fuss when getting away. A single-stepped central float takes the greater portion of the weight, assisted, when the machine is at rest, by the two wing tip floats. As soon as the speed reaches a certain point, however, these wing tip floats leave the water, and the machine is then supported on the central float only. With a Curtiss OXX engine the Burgess-Dunne does over 65 m.p.h., and the total weight lifted is over 2,000 lbs.



Hoisting Mr. Astor's Burgess-Dunne seaplane into its floating hangar.

selected the Curtiss flying-boat type as best suited to their purpose, Mr. Vincent Astor, the American millionaire, has decided on a single float seaplane of the Burgess-Dunne type. Being a member of the New York Yacht Club it is only natural that Mr. Astor should during the past summer have had his machine stationed



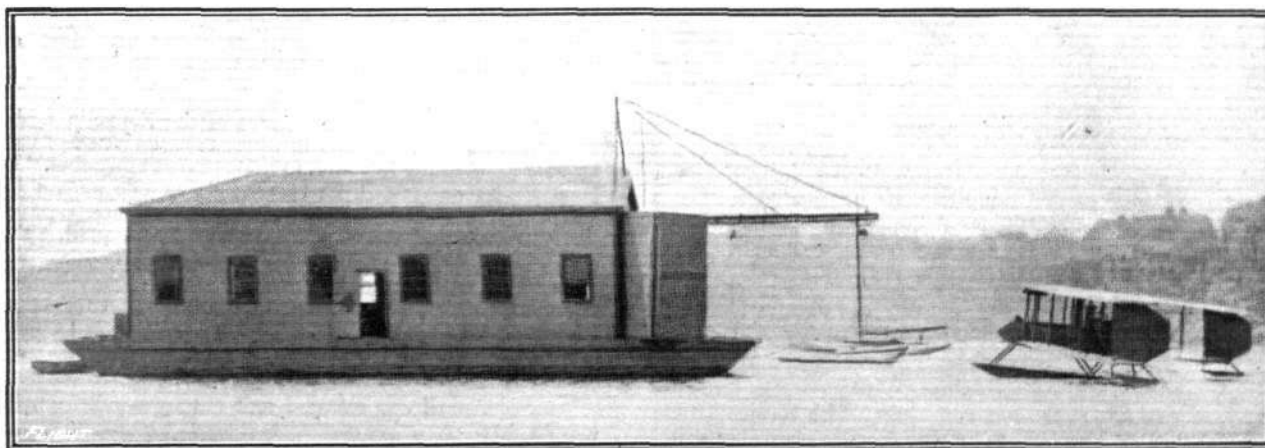
Mr. Astor's Burgess-Dunne leaving the water.

at Marblehead, where it has got through a great deal of air work over the bay. As built by the well-known Burgess firm of Marblehead, Mass., the Burgess-Dunne seaplane has proved very successful in every way both as regards weight-lifting and speed. Its stability is said to be perfect in all sorts of weather, and it appears to

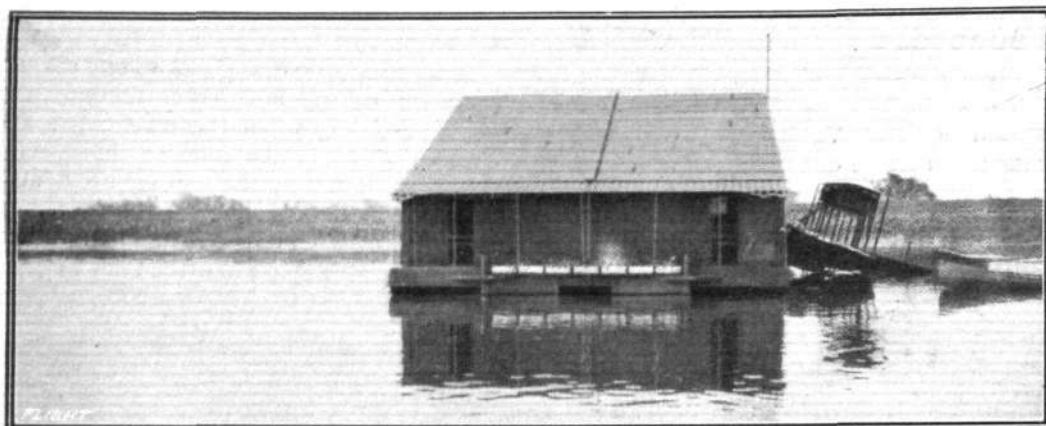


Mr. Vincent Astor's Burgess-Dunne seaplane in flight over Marblehead Bay.

In order to increase the usefulness of his machine, Mr. Astor has had a special floating hangar built for it by the Burgess Company. Should its owner so wish, the hangar and machine may be towed from Marblehead Bay to any other stretch of water, such as, for instance, the Hudson River, and used there for inland service. The floating



WATERPLANE SPORT IN AMERICA. The floating hangar which houses Mr. Astor's Burgess-Dunne seaplane.



Waterplane Sport in America.—Mr. Robert Glendinning's floating hangar which houses his "air-boat."

hangar itself is highly interesting, as it is of a somewhat unusual design. It consists, as will be seen from the illustrations, of a large punt-shaped float on which rests the hangar itself, leaving a narrow promenade running round all four sides. From the stern of the hangar projects a well-supported steel beam, which carries on two small trolleys a differential hoist. The machine is brought up to the hangar after a flight, and the hoist cable is hooked into a ring just in front of the engine. Two men can now lift the machine out of the water, and when this has been accomplished the plane is swung round until it faces across the hangar, when a slight pull on the trolley suffices to bring it under cover, securely sheltered from



Police and Zeppelin Raids.

THE following warning has been issued by the Commissioner of Police for the Metropolis:—

"In view of the possibility of further attacks by hostile aircraft, the Commissioner of Police deems it advisable to call attention to the public warning published on June 28th last, recommending residents to remain under cover, and advising them, for dealing with incendiary fires, to keep a supply of water and sand readily available. The opportunity was taken of suggesting that chemical liquid fire extinguishers should not be purchased without a written guarantee, that they comply with the specification of the Board of Trade, Office of Works, Metropolitan Police, or some approved fire prevention committee.

"Many dry powder fire extinguishers are much advertised. The Commissioner warns the public, as the result of experiments made at his instance by a competent committee of experts, that no reliance can be placed upon such appliances for effectively controlling fires such as are likely to be caused by bombs, explosive or incendiary. The Commissioner is advised as the result of these experiments that the provision, and prompt and intelligent use, of water or of sand, or of both, in dealing with such outbreaks of fire is the best, simplest, and most economical safeguard."

The Government Aircraft Insurance Scheme.

REPLYING to questions put in the House of Commons by Mr. Fell, on the 16th inst., Mr. Runciman said:—

"In view of the large number of fire insurance companies receiving premiums on account of the Government, I am afraid it would not be possible, even if it were desirable, at this stage to state the amount of premiums received. No information is yet available as to the percentage of the buildings damaged which were insured."

Mr. Runciman added that the national scheme must be on a national footing, and profits would not be distributed as bonus among the people insured. People on the East Coast were obtaining insurance at 2s. and 3s. per cent., whereas they were paying before as much as £1 per cent.

Government Rates for Insurance.

MR. RUNCIMAN, replying to Mr. Currie in the House of Commons on Tuesday, said—I am aware that the opinion has been expressed in some quarters that the Government rates for insurance against aircraft risks should be reduced. The rates in force are those recommended by the expert committee which formulated the scheme, and it is not proposed to modify them. The scheme has been in operation for not quite two months, and the experience acquired is altogether insufficient on which to base any estimate as to the adequacy or inadequacy of the rates of premium charged.

rain and wind. There can be little doubt that the combination of the Burgess-Dunne seaplane and the floating hangar in which it is housed is admirably adapted for popularising seaplaning, as it does not confine the activity of the machine to one particular locality, but enables moves to be made to suit the desires of the owner. If he so wishes, the summer months may be spent in the North, either on the Atlantic Coast or on one of the many inland lakes, whilst when winter makes climatic conditions uncomfortable for flying, the machine and its hangar may be sent down to the smiling Florida waters. What infinite possibilities for the future of the sport of aviation are here foreshadowed!



The House of Commons Relics.

MR. HARCOURT, answering an inquiry by Mr. Hogge whether any precautions were being taken to secure the safety from destruction by aircraft of valuable documents, medals, pictures, &c., in the House of Commons, said:—I have not thought it necessary to remove the medals and prints. Many of the pictures are immovable. The documents are not in my charge.

German Raids on "Fortified" London.

IN the report from the German main Headquarters sent out by wireless on Sunday, there was the following:—

"The Minister for Marine, Mr. Balfour, declared in the English House of Commons that London, as was perfectly plain to everybody and as was known to the Germans also, is an unfortified town, which, therefore, ought not to be exposed to aerial attacks, according to the rules of civilised warfare. As the Minister cannot possibly be ignorant of the fact that London is fortified with a great number of powerful fortifications and a still greater number of fieldworks, there is question here of a deliberately false representation.

"The Minister has furthermore forgotten to mention that the German airships were always bombarded by the English previous to their appearance over London. Neither does he mention the fact, which is very important for the right judgment of the state of affairs, of the continuous attacks by aeroplanes of the Allies on open German towns situated far outside the area of military operations, and even on harmless travellers in passenger trains, who are naturally not in a position to defend themselves."

Victims of the Zeppelin Raid.

ONE of the outstanding features of the Zeppelin raid on the London district was the way in which the men of the London Fire Brigade successfully laboured to prevent fires spreading. It is with great regret that we have to record that one gallant fireman—Fireman J. S. Green—lost his life through burns received while assisting to rescue several persons who were in peril. Two other firemen were also severely injured.

Another victim was Driver Krepple, of the London General Omnibus Company, and 500 motor 'bus and tram drivers attended his funeral on the 15th inst., the procession being headed by the L.G.O.C. band.

Double Menace to Constantinople.

IN a French *communiqué* sent out by wireless on Sunday it was stated:—

"The Turks have been gripped by a double terror—that of the Allied aviators who fly over the capital at almost regular intervals and that of the submarines."

The Royal Aero Club of the United Kingdom

OFFICIAL NOTICES TO MEMBERS

Aviators' Certificates.

THE following Aviators' Certificates have been granted:—

- 1711 1st Class Air-Mechanic D. R. Chapman, R.F.C. (Caudron Biplane, British Flying School, Le Crotoy, France). May 25th, 1915.
- 1712 R. A. Logan (Curtiss Biplane, Curtiss School, Toronto, Canada). Aug. 29th, 1915.
- 1713 2nd Lieut. William Norman Thomas (3rd Shropshire Light Infantry (Caudron Biplane, Beatty School, Hendon). Aug. 31st, 1915.
- 1714 Bert S. Wemp (Curtiss Biplane, Curtiss School, Toronto, Canada). Aug. 31st, 1915.
- 1715 T. G. M. Stephens (Curtiss Biplane, Curtiss School, Toronto, Canada). Sept. 1st, 1915.
- 1716 F. C. Henderson (Curtiss Biplane, Curtiss School, Toronto, Canada). Sept. 1st, 1915.
- 1717 Ross Courtneage (Curtiss Biplane, Curtiss School, Toronto, Canada). Sept. 1st, 1915.
- 1718 C. H. Darley (Curtiss Biplane, Curtiss School, Toronto, Canada). Sept. 1st, 1915.
- 1719 G. R. S. Fleming (Curtiss Biplane, Curtiss School, Toronto, Canada). Sept. 1st, 1915.
- 1720 Lieut. Archibald William Henry James (3rd Hussars) (Maurice Farman Biplane, Military School, Norwich). Sept. 3rd, 1915.
- 1721 H. J. Page (Curtiss Biplane, Curtiss School, Toronto, Canada). Sept. 3rd, 1915.
- 1722 G. K. Williams (Curtiss Biplane, Curtiss School, Toronto, Canada). Sept. 3rd, 1915.
- 1723 Ernest Potter (Curtiss Biplane, Curtiss School, Toronto, Canada). Sept. 3rd, 1915.
- 1724 L. E. Stevens (Curtiss Biplane, Curtiss School, Toronto, Canada). Sept. 4th, 1915.
- 1725 A. S. Todd (Curtiss Biplane, Curtiss School, Toronto, Canada). Sept. 4th, 1915.
- 1726 Flight Sub-Lieut. Edward Morgan Morgan, R.N.A.S. (Caudron Biplane, Royal Naval Flying School, Eastchurch). Sept. 5th, 1915.
- 1727 Walker Huggan (Hall Biplane, Hall School, Hendon). Sept. 7th, 1915.
- 1728 2nd Lieut. Henry Rathbone Hele-Shaw, R.G.A. (Maurice Farman Biplane, Military School, Farnborough). Sept. 7th, 1915.
- 1729 Roy Dennis Sampson (Beatty-Wright Biplane, Beatty School, Hendon). Sept. 7th, 1915.
- 1730 2nd Lieut. Hugh Archibald Arbuthnot (11th Reserve Regt. of Cavalry) (Maurice Farman Biplane, Military School, Farnborough). Sept. 7th, 1915.
- 1731 Roger John Edward Cadogan (Caudron Biplane, Beatty School, Hendon). Sept. 8th, 1915.
- 1732 Lieut. William Assheton Summers (18th Hussars) (Maurice Farman Biplane, Military School, Farnborough). Sept. 9th, 1915.
- 1733 2nd Lieut. Alfred Vivian McKiever (Seaforth Highlanders) (Maurice Farman Biplane, Military School, Farnborough). Sept. 9th, 1915.
- 1734 2nd Lieut. John Forster Alcock (6th Bedfordshire Regt.) (Maurice Farman Biplane, Military School, Birmingham). Sept. 10th, 1915.
- 1735 William Milne (Maurice Farman Biplane, British Flying School, Le Crotoy, France). Sept. 11th, 1915.
- 1736 2nd Lieut. Charles Reginald Cook (8th Northamptonshire Regt.) (Maurice Farman Biplane, Military School, Ruislip). Sept. 11th, 1915.
- 1737 Lieut. George James Jones (Lancashire Fusiliers) (Maurice Farman Biplane, Military School, Norwich). Sept. 11th, 1915.
- 1738 William Oswald Russell (Hall Biplane, Hall School, Hendon). Sept. 12th, 1915.
- 1739 Capt. Herbert James Edgar (4th Cheshire Regt.) (Maurice Farman Biplane, Military School, Norwich). Sept. 13th, 1915.
- 1740 Lieut. Geoffrey Henry Hall (1st Welsh Horse) (Maurice Farman Biplane, Military School, Norwich). Sept. 13th, 1915.
- 1741 Flight Sub-Lieut. Reginald Morgan Clifford, R.N.A.S. (Grahame-White Biplane, Grahame-White School, Hendon). Sept. 13th, 1915.
- 1742 2nd Lieut. Francis Mapleton Iremonger Watts (Worcestershire Regt.) (Maurice Farman Biplane, Military School, Norwich). Sept. 13th, 1915.
- 1743 Flight Sub-Lieut. Henry McClelland, R.N.A.S. (Maurice Farman Biplane, Royal Naval Air Station, Chingford). Sept. 13th, 1915.
- 1744 Flight Sub-Lieut. Percy Roach-Pierson, R.N.A.S. (Grahame-White Biplane, Grahame-White School, Hendon). Sept. 13th, 1915.
- 1745 Alfred Ernest Hatchman (Hall Biplane, Hall School, Hendon). Sept. 14th, 1915.
- 1746 Flight Sub-Lieut. Arthur Denis Wigram Allen, R.N.A.S. (Maurice Farman Biplane, Royal Naval Flying School, Eastchurch). Sept. 1st, 1915.
- 1747 Capt. Lord Lucas (Hants Yeomanry) (Maurice Farman Biplane, Military School, Gosport). Sept. 2nd, 1915.
- 1748 2nd Lieut. Samuel Trevor Ravenscroft (Lancashire Hussars) (Maurice Farman Biplane, Military School, Norwich). Sept. 5th, 1915.
- 1749 Flight Sub-Lieut. Walter Travis Swire Williams, R.N.A.S. (Caudron Biplane, Royal Naval Flying School, Eastchurch). Sept. 7th, 1915.
- 1750 Corporal William Frederic Rogers (Canadian Cyclists) (L. and P. Biplane, London and Provincial School, Hendon). Sept. 13th, 1915.
- 1751 2nd Lieut. Charles Ernest Hilton James (Border Regt.) (Maurice Farman Biplane, Military School, Birmingham). Sept. 14th, 1915.
- 1752 E. N. Clifton (Maurice Farman Biplane, British Flying School, Le Crotoy, France). Sept. 14th, 1915.
- 1753 William Rowland Spottiswoode Humphreys (Maurice Farman Biplane, Military School, Birmingham). Sept. 15th, 1915.
- 1754 2nd Lieut. William Brass (Surrey Yeomanry) (Maurice Farman Biplane, Military School, Birmingham). Sept. 15th, 1915.
- 1755 Sydney Charles Thomas Littlewood (Hall Biplane, Hall School, Hendon). Sept. 16th, 1915.
- 1756 Flight Sub-Lieut. James Earle Minifie R.N.A.S. (Grahame-White Biplane, Grahame-White School, Hendon). Sept. 17th, 1915.
- 1757 Victor Max Wenner (Hall Biplane, Hall School, Hendon). Sept. 17th, 1915.
- 1758 Flight Sub-Lieut. Norman Stewart Dawson, R.N.A.S. (Maurice Farman Biplane, Royal Naval Air Station, Chingford). Sept. 17th, 1915.

Aeronaut's Certificate.

The following Aeronaut's Certificate has been granted:—

- 42 Capt. Maurice Bernal Blake, R.F.C. September 6th, 1915.

Extension of the Hours of Opening the Club.

The Club is now open from 9 a.m. to 10.30 p.m. each day, including Sunday.

THE FLYING SERVICES FUND

administered by

THE ROYAL AERO CLUB.

THE Flying Services Fund has been instituted by the Royal Aero Club for the benefit of officers and men of the Royal Naval Air Service and the Royal Flying Corps who are incapacitated on active service, and for the widows and dependants of those who are killed.

The Fund is intended for the benefit of all ranks, but especially for petty officers, non-commissioned officers and men.

Forms of application for assistance can be obtained from the Royal Aero Club, 166, Piccadilly, London, W.

Subscriptions.

| | £ | s. | d. |
|--|-------|----|----|
| Total subscriptions received to Sept. 15th, 1915 | 9,576 | 0 | 9 |
| J. W. and F. Goode | ... | 0 | 10 |
| A. M. Daintrey | ... | 0 | 4 |

Total, September 22nd, 1915 ... 9,576 15 3

166, Piccadilly, W. B. STEVENSON, Assistant Secretary.

FROM THE BRITISH FLYING GROUNDS.

London Aerodrome, Collindale Avenue, Hendon.

Grahame-White School.—Straights with instructors last week: Probationary Flight Sub-Lieuts. Corry, Cross, Gammon, Hackman, Hadow, James, Sadler and Till, and Mons. de Meulemeester. Straights alone: Probationary Flight Sub-Lieuts. Biscoe, Gammon, Sadler, Corry, Hadow and Hackman. Circuits alone: Probationary Flight Sub-Lieuts. Minifie and Davies.

Brevets: Probationary Flight Sub-Lieuts. Clifford, Minifie and Roach-Pierson.

Instructors: Messrs. Manton, Russell and Winter.

Beatty School.—The following pupils were out during the week:—With instructors on Beatty-Wright machines: Messrs. Arbon (50 mins.), Baldwin (20), Bond (40), Broadbent (5), Calvert (10), Crossman (85), Delves (131), Fellowes (11), FitzHerbert (60), Fox (57), T. Jones (149), King (75), Litton (75), Middleton (21), Morgan (15), Murdock (10), Onley (10), Richard (8), Ross (131), Smith (78), Theo (106), Tolhurst (69) and Willmet (42). On Caudron machines: Begg (20 mins.), Bowick (15), Brown (10), Campbell (25), Collett (20), Coates (10), Collier (40), Cowper (15), Davison (25), Fawcett (10), Gayner (15), Hodgson (30), Hoskins (30), L. F. Jones (25), Kirkwood (10), Lashmar (15), Mellings (20), Moxon (15), Nash (10), Nicholson (15), Owen (20), Rimington (30), Whincup (10), and Duffus (15). The instructors were Messrs. G. W. Beatty, W. Roche-Kelly, C. B. Prodger, R. Kenworthy, A. E. Mitchell, and G. Virgilio, the machines in use being Beatty-Wright propeller biplanes and Caudron tractor biplanes.

Exhibition flights were given on Thursday by Messrs. Roche-Kelly and Kenworthy and on Saturday by Messrs. Roche-Kelly, Prodger and Kenworthy, and 9 passenger flights were taken.

Hall School.—Another splendid week's work last week at the Hall school. The following pupils successfully passed their Royal Aero Club certificates: Messrs. Russell, Hatchman, Littlewood and Wenner, all taking their "tickets" with precision and accuracy.

The following pupils are now ready to qualify: Watson and Bayley.

During the week the following pupils received instruction: With Instructor H. F. Stevens: Messrs. Hatchman, Littlewood, Wenner and Russell, all doing circuits, figure eights, with *vol plané* landings. With Instructor C. M. Hill: Messrs. Watson (senr.), Bayley, Drew, Cook, Bangs, Watson (junr.), and Sepulchre, all doing circuits or half circuits, landings with motor stopped. With Instructor Charles Bell: Messrs. Brandon, Camberbirch, Dresser, Baron Ackroyd, Evans, Watson (junr.), Seward, Nicolle, Lieut. Bell, Stirling, Hall, Broad, Hooker, Brandon, Bond, Butterworth, Wilkins, Arnsby, Punnett, and Lieut. Dalley. Machines in use: Hall (Government type) tractor biplanes.

London and Provincial Aviation Co.—Pupils doing rolling last week: Messrs. Lochett, Lewis Knowles, Dawson, Dalrymple and Ellis. Pupils doing straights: Messrs. Blackburne-Maze, Grimwade, Woolley and Rochford. Pupils doing circuits and eights: Messrs. Jamieson, Woodley, Sargood, Franklin and Grimwade.

Certificate taken by Mr. W. Rogers in splendid style.

Instructors: Messrs. M. G. Smiles, W. T. Warren, G. Irving and C. M. Jacques.

Ruffy-Baumann School.—The weather was not ideal last week for tuition purposes, but nevertheless a good deal of school work has been accomplished. Among other things, students have had further experience of the Gnome (50 h.p. and 60 h.p.), as well as their ordinary flying instruction.

The following pupils are progressing favourably: Messrs. Cole (16 mins.), De Grauw (24), Harkness (22), Tagg (8), Bolton (24), Chambers (35), Lieut. Tomson (24), Johnston (8), Lieut. Gallop (48), Griffith (34), Sherwood (24), Lieut. Rees (30), Muspratt (36), Stewart (25), Lieut. Prothero (34), Liddell (46), and Bailey (34).

Instructors: Edouard Baumann, Felix Ruffy, Clarence Winchester, and Ami Baumann.



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Some pupils at the Hall School, Hendon, who have recently passed for their Royal Aero Club certificates.—From left to right: 2nd Lieut. E. C. Jowett, 12th Northumberland Fusiliers; Corpl. F. E. Goodrich, 48th Canadian Highlanders; Mr. C. H. Bell, Mr. J. A. Yonge.

ARMCHAIR REFLECTIONS.

By THE "DREAMER."

Zeppelinitis.

I SUPPOSE Jupiter sailed majestically through the firmament when Titanus in far-off Peloponnesus kept his nightly vigil. I doubt not that he knew it was Jupiter. Secure in his astronomical learning, he was well versed in the planet's pathway, knew when to expect it, knew where to look for it, knew it when he saw it. I doubt his having to cogitate whether it was a star or a Zeppelin. Jupiter has caused me much petulance for many months. I know quite well it is Jupiter. I am perfectly willing that he sail his nightly course and wink his eye at me when I stroll out into my garden at night to look for Zeppelins.

But there are two troubles. Firstly I appear to be the only person in our neighbourhood who does know him as Jupiter, and, secondly, by that mysterious process known only to suburbanites, of whom I am the sole exception, I am known to be connected with aeroplanes, and, therefore, to be fetched out willy-nilly to explain everything connected with the upper air.

I have explained times out of number that it is Jupiter and not a Zep. carrying a strong headlight, that Zeps. do not sail over and flash a great light to help us to find them, yet the same people return in their turn to invite me to come out and look.

I wish Hawker on his next altitude stunt would fly up and hang his cap over Jupiter.

Twelve months ago my own daughter rushed into the house and dragged me out to see — Jupiter. Only last evening she was just as sure that it was at least a captive balloon signalling.

A neighbour who lives directly opposite me has had more than a fair share of my explanations, on more than a fair share of occasions. Only last night I called his wife's attention to what I thought, in the dark, was her little girl hanging out over the window-sill. "Look at your little girl, Mrs. —. I'm afraid she might fall." "It's not my little girl. She's asleep. It's my husband with his telescope watching the airship." The next time Mr. Over-the-way says anything to me about Jupiter being an airship, I'll brain him.

One of my friends is managing director of a very large firm who build iron bridges. He is a really clever fellow. He walks about with slide rules bristling from his every pocket, he bulges with facts, figures and formulæ. He can take the cube root and the square of the distance, put seventeen over thirty-five, and tell me the weight of the Tower Bridge to half-an-ounce, plus the bits of paper lying in the roadway. To me this is black magic. I know nothing of these things, but I know a tram-flash when I see one. I do not follow his lead and mistake it for anti-aircraft stations signalling when it is but common sense that they would have telephones. We have argued the point until I am sick of it. Like the Jupiter people he cannot be moved, and he fixed me the other evening, once and for all. He had found out all about it, and it WAS the anti-aircraft people. They take a flashlight photograph of the heavens every few moments, develop the plate, and if they see a Zeppelin in the picture, fire at it.

Mrs. Next-door-on-my-right is a kindly soul; she would not hurt a fly. When I had my first view of a Zep. it had shells bursting all round it. I was wildly excited, and voiced my wish to see it come toppling down. "Oh! Mr. —, don't say that. Think of the poor souls on board." Like a fool, I started to argue with a

woman, and, of course, as usual, I got "side-tracked" and worsted. Mrs. Next-door-on-my-left rescued me—she made some coffee. I have had coffee in France, and I am chary of the English kind. I passed. Mrs. Next-door-on-my-right thought not of her own soul as she did of those of the Huns, who have no souls, and partook. She disappeared indoors, I am sure she was violently ill. If Mrs. Next-door-on-my-left would only make coffee and put it up in thermos flasks, which are much the size and shape of a 3-inch shell, and supply them to the anti-aircraft guns, the next raid would be the last. Mrs. Next-door-on-my-left's coffee would devastate at ten thousand yards.

But for such —.

He got in, I think, at Chancery Lane, and his admittance to our company met with polite disapproval. He was a man perhaps seventy years of age, with a heavy grey moustache, his boots and clothes had seen better days, and true to the custom of his class on Saturday nights he had had some beer. Not enough of this to make him quarrelsome, but enough to make him anxious to talk to anybody that would talk back, and even without this latter condition if necessary. We were the usual respectable travelling class in that carriage, of the class who dress in flannels on Saturdays, and talk tennis and cricket, and he came into our company unasked and unwanted, but with the right, thank God, of every man be he rich or poor in this country.

He sat down directly facing me, and glanced round for a victim. Evidently deciding that I would do, he got up and leaned over me, resting his hand on the empty seat by my side, and said, "Do you remember that message to the Scots Greys?" and dropped back into his seat nodding and mumbling at me. I felt confused and murmured some silly reply, for I felt, rather than saw, the pitying smiles of my fellow passengers. He fumbled in his pocket and produced several cigarette ends which he stripped of their paper and put in his pipe, all the while talking to himself. I knew he would want a match, such as he never carry matches, so I had my box ready in order to shorten the ordeal as much as possible.

He looked at me and started to rise, but I leaned over and handed him the matches, and he sat puffing away without giving me back the box. Suddenly he got up and leaned over me again, "Didn't Napoleon say, 'Give me the Thin Red Line and I'll fight the world'?"

He sat down once more, and forgot to smoke. Instead, he sat staring under the seats opposite, his eyes alternately growing round and flashing, and narrowing with a far-distant look, his jaw set, and his hands continually clenching and unclenching. Then he leaned forward and began that peculiar rotary movement of the hands and knees illustrative of jockeying, and holding his pipe by the bowl, commenced to cut to right and left, all the while rotating the imaginary reins in his left hand.

He forgot us. He did not see the floor under the seats. He saw only a green field away in some far-off country with the masses of the enemy drawn up in line before him. Unconsciously, and without removing his eyes from the floor, he took off his battered old hat and threw it on the seat beside him, his white hair stood upright—it was rather nice hair, and clean—and once more he settled down to that charge of by-gone days.

I could see him girt his poor body together for the crash; see him with his right hand gather the reins together and place them more firmly in his left, which he turned over, wrist downward, in that peculiar way known only to horsemen. Sitting right on the very edge of the seat, with his heels drawn under, his pipe began again to cut and parry, parry and thrust, not in wild swoops with arm extended, but in small movements of but a few inches. He crouched lower and lower, the upper part of his body quickly alternating from side to side, his left hand shaking up his charger with the reins.

It was horribly realistic. I became fascinated, and found myself also leaning forward, my eyes fixed on his face, my jaw set, my muscles taut. — we stopped at the Bank.

The jerk brought him back to reality, and he sat up and looked round, the light of battle still in his eyes. Once again they settled on me. He pulled up his left sleeve with a jerk—I saw no shirt. "See that!" he said, "Didn't Napoleon say, 'Give me English soldiers and I'll fight hell'?"

Just below the elbow was a seared wound about the size of a crown piece, shrunken and drawn, and in the centre a piece of smooth livid skin, perhaps an inch and a-half long, by an eighth wide. He turned his arm over—it was clean—and on the other side was a similar wound. It looked remarkably like a sabre-thrust, right through the arm.

Old man in the train, you have my deepest respect, I take my hat off to you.

I looked for you at Liverpool Street, but could not find you. I wanted to talk to you, but I waited too long. I was ever a long time making up my mind—much longer than you were when you got that order to charge, and I repented too late.

I would even have bought you some more beer, if that is your idea of happiness.

You have served your country in its hour of need, you have added your bit to that mighty whole that has kept England where she is, and, if beer is your consolation, I would have clinked glasses with you and been honoured.



EDDIES.

It seems that the darkened aspect of London districts has been responsible for, among other things, an enormous unpremeditated increase in the number of amateur astronomers, judging from the numerous little groups one can see on almost any night, and in practically any street, keenly watching with upturned faces such of the celestial bodies as may be visible through the remnants of the day's smoke output. One in particular is coming in for a good deal of attention on account of its brilliancy. It is according to the astronomically and dreamily minded member of our staff known as Jupiter. Its particular attraction to the many star-gazers is the conviction that the old fellow is the port light of a Zep. As the distance of Jupiter from this dear old mud ball of ours is at present, again according to our own dreamy astronomer, somewhere between 300 and 400 million miles, one is inclined to doubt whether the Zeppelins' wholesome respect for our aerial defences (to come) is great enough to make them go quite as high as that. I suggest, therefore, that the groups of wondering folk should let the planet follow its orbit in peace, and look a bit lower down for the Huns' birds of prey.



Motorless flight, the dream of centuries, has at last been realised. At least it is within measurable distance of realisation if the Marseilles correspondent of the *Matin* is anywhere near right in his statement that an Italian engineer living in that city has made a marvellous discovery by means of which he has solved the problem of maintaining a body suspended in space, absolutely motionless. The apparatus is said to be capable of carrying a considerable weight, and can be propelled in any direction or stopped at any point, without the use of any sort of mechanical motor, simply by the use of currents. The inventor is said to claim for his machine, which is cigar-shaped, is four metres long and 75 centimetres in diameter, and weighs 95 kilogrammes and can raise 45 kilogrammes, that it can remain for 24 hours in the air at a point 200 kilometres from its starting place. Unfortunately no mention is made of the method whereby the cigar gets to the point 200 kilometres away, nor of how long it took to get there. This may be a mere detail, but it occurs to one that after spending 24 hours

in motionless suspension in space, the pilot, if such an accessory is fitted, would be pretty bored and make a move to get back home for a bit, provided, of course, that he had not in the meantime been potted by anti-aircraft guns.



The temperature of feet is a question often discussed among pilots and their friends, and sometimes, but not often, among disappointed visitors who do not see quite so many 'buses in the air on a windy day as they imagine they are entitled to. Hitherto when the subject has been aired it has generally been the lack of British Thermal Units to which reference has been made, but it seems that there is such a thing as hot feet. At least that was the explanation given me the other day up Hendon way by Mr. Moore, whom I encountered with the lower extremities of his chassis members tucked away comfortably in a pair of slippers. When flying for any length of time Mr. Moore finds his feet getting uncomfortably hot, and so has adopted this means of cooling. One would venture to suggest that it might be a good idea to have the foot bar of the rudder extended out through openings in the side of the *nacelle* and let both feet project thereon. If necessary, a pair of shoes fitted with aluminium fins (No, I shouldn't copper bottom 'em) might be used instead of the slippers. By the way, Moore has now got his new 50 h.p. Anzani engine installed on his machine, and has emerged from his enforced retirement. With the new engine the 'bus is going better than ever, and its speed appears to be in the neighbourhood of 60. He has lately been busy taking up passengers, who one and all have been ever so pleased with their experience.



A Dutch correspondent writes me as follows: "Last Friday we had the pleasure of being visited by a Zeppelin. About 6.20 p.m. I was riding along the canal on my motor cycle, when, looking up, I saw a puff of smoke high up in the air, just as I had seen from Zeppelins when in Germany last year. I stopped immediately and took out my field-glasses, which I always have with me, as I am with the artillery scouts. Pretty soon I saw very dimly a Zeppelin coming in my direction at a great speed. I

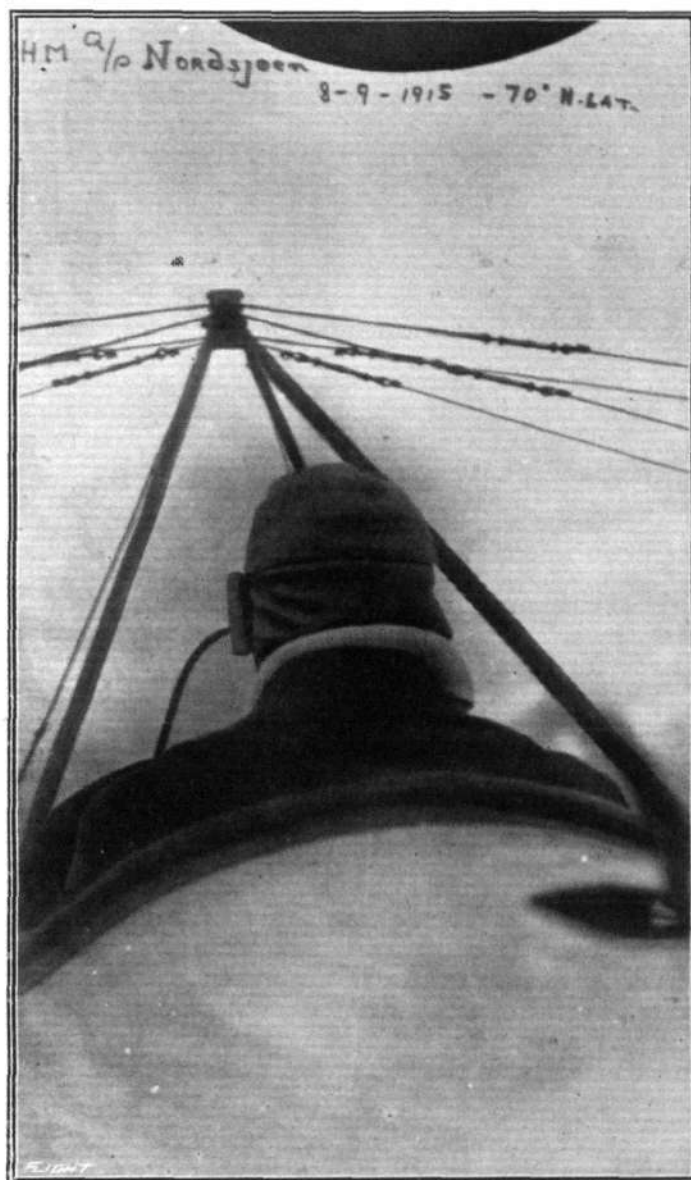
remained still where I was in order to see what they were going to do. In a few moments I could see it without my glasses. It was descending very slowly, and although I had stopped my engine I was unable to hear those of the Zep. Its motors were running nevertheless, as I could see the propellers flash in the sunlight. Shortly after it passed overhead, rather low, not more than 600 metres, I think. It was painted a dull grey, and had its engines silenced. There were three cabins, so that it was probably one of their much-boasted super-Zeppelins. In the meantime most of the anti-aircraft guns had got to work, and after remaining for a few minutes at the same spot the Zep. ascended steeply and disappeared behind the clouds. The airship did not give the impression of having lost its way, although that was the explanation given by the German Government on enquiries by our Ambassador."

x x x

"The following *communiqué* by the *Berliner Tageblatt* may interest you," the same correspondent says. "Some time ago it was mentioned that a certain aviator, Knubel, was making trials with a so-called invisible machine in the neighbourhood of Münster. A few days ago he again ascended in his latest monoplane in the presence of a great number of people. He climbed to a height of about 300 or 400 metres, when suddenly his machine made a dive and crashed to earth, the pilot being killed instantly. Anton Knubel was rather well known in the German aviation world. He was the first to use Cellon as a material for the wings in order to make the machine invisible."

x x x

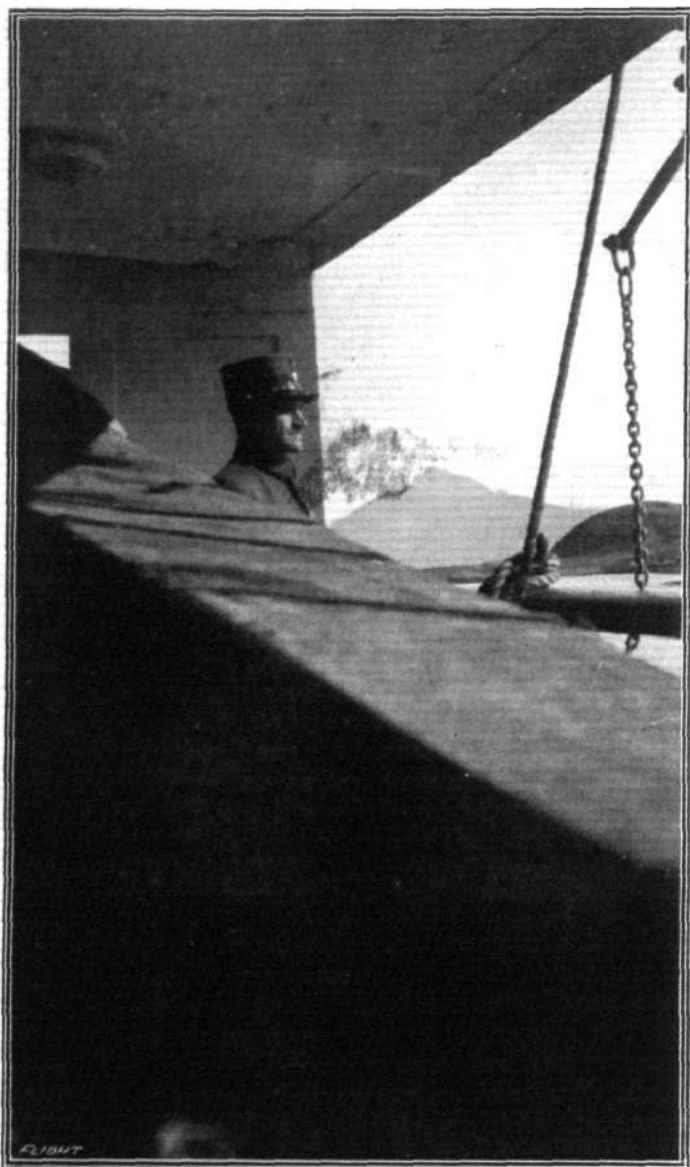
It would be a difficult matter to forget the name of Lieut. Trygve Gran, of the Norwegian R.F.C., who got his "ticket" at the Hall school, and who on July 30th of last year made his magnificent flight of some 320 miles across the North Sea, from Cruden Bay in Scotland to Klep on the Norwegian coast. After this fine achievement Lieut. Gran sold the Blériot monoplane on which the flight was made to the Norwegian Government.



A snap in 70 degs. N. latitude of Lieut. Gran, taken by his passenger at an altitude of 3,000 feet. The machine is one of the Norwegian Royal Flying Corps' two-seater Blériots, named Nordsjöen (North Sea).



Lieut. Gran transporting his Blériot by road in the Arctic regions of Norway.—The driver is typical of that part of the country.



Lieut. Gran on board the steamer with his Blériot at the moment of crossing the Arctic circle.

Since the outbreak of war Lieut. Gran has been kept busy patrolling the Norwegian coast on a Blériot two-seater, and chasing off submarines that seek refuge in the deep sheltered *Fjords* on the west coast, as recorded in "Eddies" several months ago. Lieut. Gran has now sent us some particularly interesting photos which show that he is now stationed far up north; in fact he claims that his station is the farthest north flying station in the world. That flying under the conditions existing up there is far from being a Sunday school picnic will be readily realised when it is remembered that the Norwegian coast is extremely rugged, and landing grounds few and far between. On the 7th of this month, Lieut. Gran made a 100-mile flight over the mountains at an altitude of about 5,000 ft. As this and others of his air journeys have taken place to the north of the Arctic circle, Lieut. Gran can claim, I should say, to be the first to fly in Polar air.

"ÆOLUS."

A Gift from Garros.

IN a French *communiqué* sent out by wireless on the 21st inst. it was stated that the Lieutenant-Aviator Garros, now a prisoner of war in Germany, has given to the French Red Cross a prize of 1,000 francs, which was presented to him by the Press of Dunkerque.

CONSTRUCTIONAL DETAILS.—III.

HAVING illustrated in our previous full page sets of comparative sketches various ways in which the inter-plane struts may be connected to the wing spars, we continue our series this week with a set of *fuselage* joints. Numerous as are the methods employed for securing the struts to the spars, the means whereby body struts and cross members are attached to the longitudinals are perhaps even more so. As of these three members the *longeron* takes the greater part of the strain it is generally the aim of designers to avoid piercing this member, hence the number of clips designed to grip the *longeron* without the necessity of drilling holes through it. Where this has been found impracticable extra thickness has been given to the *longeron* to allow for the weakening due to piercing.

Another purpose served by the *fuselage* joint, apart from that of forming a support for struts and cross members, is that of providing an anchorage for the diagonal cross bracing which lends rigidity to the whole structure. In some cases, it will be seen, this object is attained by an integral portion of the main fitting, while in others a special clip, frequently in the form of a chain link, is employed. Apart from considerations of strength the form of fitting chosen is influenced by cost and rapidity of manufacture, the latter being a factor of considerable importance at the present juncture.



An Aeroplane from Argentina.

MEMBERS of the British Society in the Argentine Republic have, through the League of the Empire, its representative in England, presented an aeroplane to the Army Council. The aeroplane has been accepted by the Government and will be named the River Plate.

Recruiting by Aeroplane.

ONE of the items on the programme of a large recruiting meeting which is to be held at Portsmouth on October 2nd is to be the distribution of leaflets from an aeroplane which will fly over the town. It is hoped that Lieut. Holbrook, V.C., who commanded the Submarine B11, which did such good work in the Dardanelles, will be able to present.

Escaped German Prisoners.

ONE of the prisoners who escaped from Dorchester last week and was recaptured at West Hartlepool on Monday, was Hans Heyn, who was the pilot of a German seaplane which fell into the North Sea.

Of the two officers who escaped from Donnington Hall on Saturday one was the well-known German pilot Otto Thelen, of whom the following description has been circulated by the police authorities at Scotland Yard:—

"Otto Thelen, German Flying Corps, aged 25, height 5 ft. 7 in., stiff build, weather-beaten features, somewhat sallow complexion, grey eyes, fair hair, slight scar on left part of forehead, caused by a burn, clean shaven, wearing knickers and stockings of greyish material. Speaks English with a foreign accent."

A reward of £100 is offered to any person giving information which will lead to his arrest.

Wrecked German Seaplanes.

THE *Morning Post* correspondent at Stockholm on September 20th, wrote: "A telegram from Malmö states that the Gothenburg steamer "Torfrid," when passing Falsterbo last night, observed an abandoned hydroplane which was flying the German flag and floating with its pontoons uppermost. The steamer tried to take the machine in tow, but the wire hawser broke, and, owing to the heavy weather prevailing, no further attempt was made."

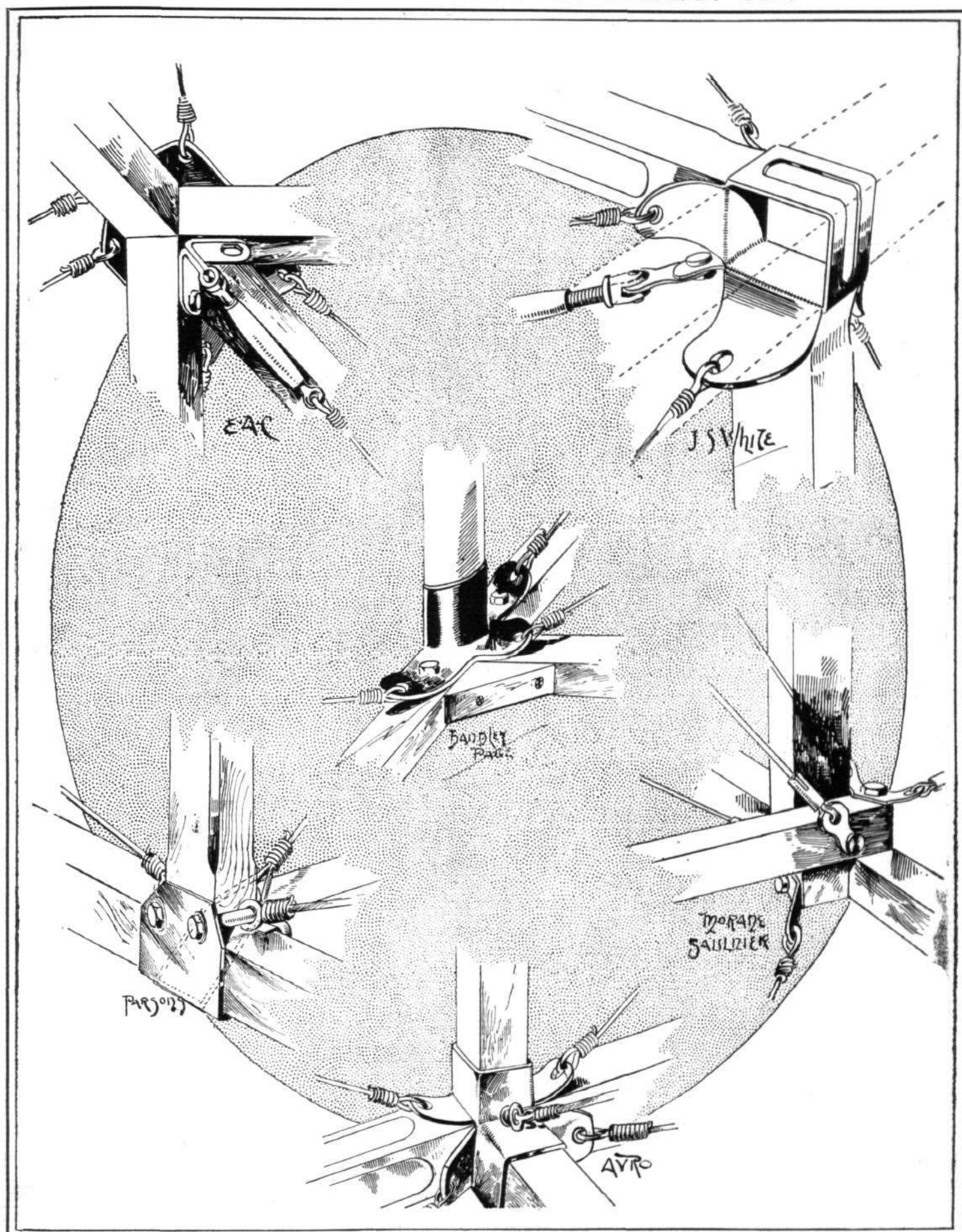
From Copenhagen, on the same day, a *Daily Mail* correspondent also reported:—

"A German waterplane capsized last night outside Trelleborg, Sweden, the airmen being drowned. Three other German flying machines belonging to the German patrolling squadron guarding the entrance to the Baltic were totally wrecked during the storm of the past few days."

An Exchange message from Amsterdam on Monday said:—

"The steam lifeboat "Brandaris" has brought in to Ter-schalling two men from a German hydroplane which was wrecked in the North Sea."

CONSTRUCTIONAL DETAILS.—III.



Various methods of connecting struts and cross-members to the longerons of the fuselage.

SOME AMERICAN AERO ENGINES.

THE HALL-SCOTT.

ONE of the pioneer firms in the States manufacturing aero engines, the Hall-Scott Motor Car Co., of San Francisco, Cal., has during the past seven years produced five different models of aero motors. The first of these was a 30 h.p. 4-cylinder water-cooled vertical, then followed three 8-cylinder V-type models, and just recently they

cast separately with removable heads containing the valves. Located directly over the pistons, the valves are all mechanically operated by means of tappet rods and rocker arms from a single camshaft situated between

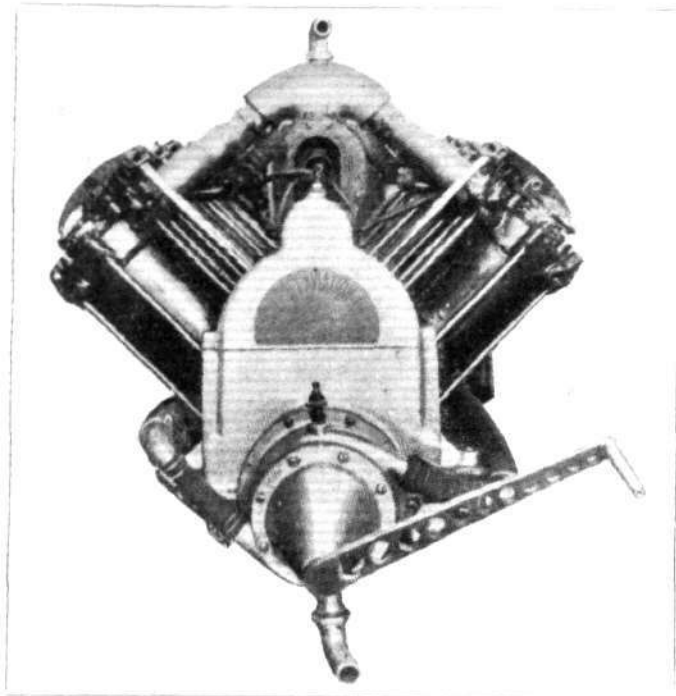


Fig. 1.—End view of the 100 h.p. 8-cyl. V Hall-Scott aeromotor, model A4.

have put on the market a 6-cylinder vertical 125 h.p., specially designed for military purposes, and it is to this latter model to which the following notes mainly refer.

Type A4, the 100 h.p. 8-cylinder V, has the cylinders

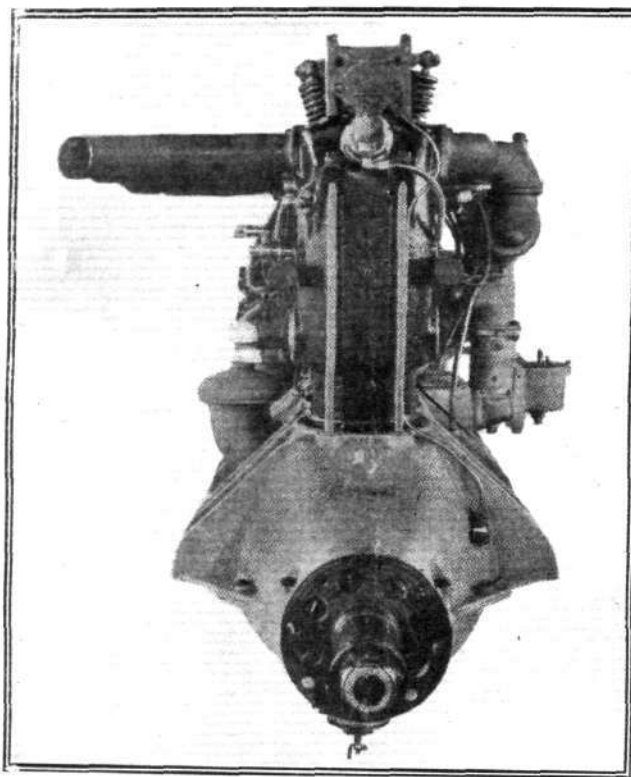


Fig. 3.—End view of the Hall-Scott model A5 aeromotor.

the V. Through-bolts extending from the latter to lugs formed in the cylinder heads hold the cylinders down on to the crank case. Water-jackets are formed integral

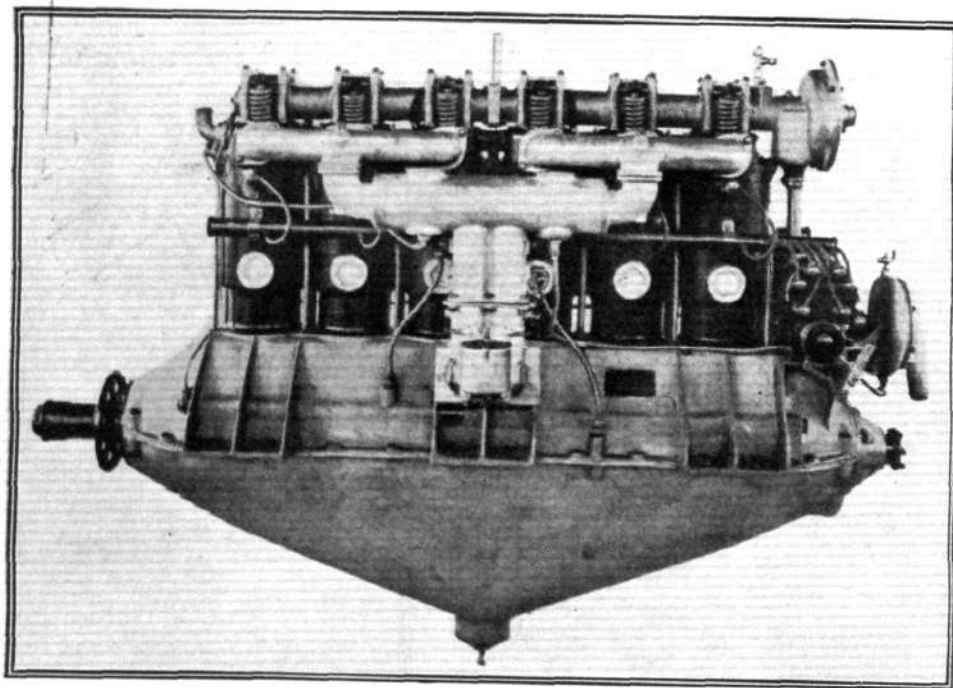


Fig. 2.—The inlet side of the new 125 h.p. 6-cyl. vertical Hall-Scott aeromotor, model A5.

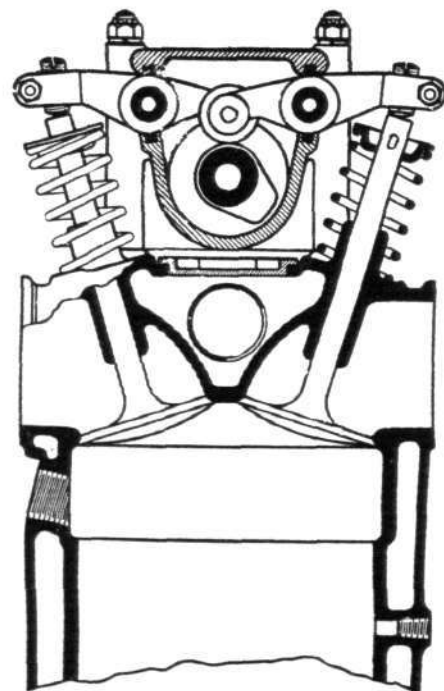


Fig. 4.—Section through the cylinder head of the Hall-Scott model A5 aeromotor, showing the valves and over-head camshaft.

with the cylinders, the water being circulated by a large pump mounted on one end of the crankshaft. A single Stromberg carburettor, mounted midway between each group of four cylinders, supplies the latter with an equal quantity of fuel by means of short branch-piece manifolds. The magneto is also mounted between each row of cylinders, and is driven by spur gearing from the camshaft. A combination of forced and splash lubrication is employed. This engine—the bore and stroke is 5 ins.—develops 100 h.p. at 1,200 revs. per min., and weighs 535 lbs. without radiator and water, and 625 lbs. complete, giving a weight per h.p. of 6 lbs.

Although similar in appearance to the German motors of the Mercedes type, the new 6-cylinder vertical A5 engine possesses many original features. The cylinders, having a bore of 5 ins. and a stroke of 7 ins., are cast separately in semi-steel with integral heads and water-jackets. The water spaces, especially around the valves, are of large proportions, and water is circulated through each water-jacket by means of a centrifugal pump driven by the vertical shaft that operates the camshaft. The cooling water inlet is of the usual type located at the bottom of the jackets, but the outlet takes a rather unusual form. Passing through each water-space, between the valves, is a brass tube which has a hole cut in its side nearest the exhaust valve for the passage of the water. Each tube is connected with that of the next cylinder by means of a short length of rubber hose. The size of the holes in the tubes are so gauged that the circulation of water is regulated to keep all the cylinders at an even temperature. The cylinders are held down on to the crankcase by through-bolts extending from the latter to lugs on the cylinder heads, and bosses formed on the sides and at the top of the cylinders are machined where they abut against those of the adjacent cylinders, so that when the cylinders are bolted down the latter are held tight against each other, forming practically a solid block and rigid engine thereby.

The valves are located in the heads, and have a diameter of $2\frac{1}{2}$ ins. They are operated by rocker arms from a camshaft supported by four bearings in an oil-

tight aluminium casing, mounted on the top of the cylinders. The camshaft itself is operated from the crankshaft by a bevel gear driven vertical shaft. The pistons are exceptionally light, and are made of the same material as the cylinders. In order to keep the heat of the piston heads as far away as possible from the gudgeon pins, the bearings of the latter are situated rather low in the piston. The large diameter crankshaft is supported in seven bearings, and is constructed from chrome nickel steel in the following somewhat unusual method. It is first drilled and roughed out with the crank-pins in one plane. It is then heated and the cranks offset 120° apart, after which it is straightened and turned into a grinding size. It is next heat treated, and then finished accurately to size.

Lubrication is forced throughout, a small pump in the bottom of the sump driven by a shaft and spur gearing from the crankshaft forcing oil to all bearings. This pump draws oil from the sump, and forces it to a jacket surrounding the carburettor manifold, and thence to the main distributor pipe in the crankcase. The fuel mixture is thus warmed by the oil as well as by a water-jacket round the main inlet manifold. The pressure of oil in the main distributor pipe can be regulated by means of a bypass, the surplus oil being returned to the sump, the oil level of which is shown by an indicator at the top of the engine consisting of a small ball attached to a float in the sump by means of a stiff wire which passes through one of the holding down bolts. The cylinders are lubricated by a separate six-plunger pump mounted alongside the water pump, the stroke of each plunger being adjustable according to the requirements of each individual cylinder. A Zenith bi-jet carburettor is fitted. Ignition is by two magnetos, driven by the vertical shaft driving the camshaft, and by two sets of sparking plugs. During a recent 8-hour test one of these engines is stated to have developed 142 h.p. at 1,230 r.p.m. (the average speed throughout the test) and consumed 10.25 gallons of petrol per hour and 5 gallons of oil. The total weight of the engine is 625 lbs., the weight per h.p. being about 5 lbs.



FLYING AT HENDON.

PERHAPS the most important event at Hendon last Saturday afternoon was the utter de-feet (for the time being) inflicted upon Marcus D. Manton's socks by those protecting the lower extremities of A. M. Ramsay—of the British Caudron Co.—which certainly stirred things up a bit. Otherwise the weather was nice and fine. There was a goodly number of visitors in the various enclosures, and many motor cars in the paddock. The flying commenced at about 3 o'clock when M. Osipenko ascended on the 50 h.p. G.-W. school 'bus. J. H. Moore then got up on his biplane fitted with the new 50-55 h.p. Anzani and showed us what it could do in the way of climbing and speed round the pylons. After climbing to an altitude of three or four thousand feet in a remarkably short space of time, he descended by way of several right- and left-hand spirals, and before landing took the 'bus at speed round the course. The pace attained was certainly not less than 60 m.p.h., quite a good performance, and a considerable improvement on its past achievements. Marcus D. Manton and J. S. B. Winter, on 50 h.p. G.-W. 'buses were the next to get to work, and then two B.E. and a Curtiss were seen stunting around. After this

E. Baumann got going on the 60 h.p. Ruffy-Baumann, his cousin, Ami Baumann, coming out a little later. The three Beatty bankers, R. Kenworthy, C. B. Prodder and W. Roche-Kelly, then put up some very good exhibitions on the Beatty-Wrights. Throughout the rest of the afternoon all these pilots made numerous flights on the machines mentioned, including a couple by Manton on the 100 h.p. G.-W. scout.

On Sunday strong winds again made themselves felt, so that there was not so much flying as on the last couple of week-ends. However, J. H. Moore and M. Osipenko managed to put in some good work on the former's 50-55 h.p. biplane and the 100 h.p. G.-W. 'bus respectively.

Since the outbreak of war the Grahame-White Aviation Co. have only given instruction to R.N.A.S. pupils, but now an additional school is to be opened for civilians. This school will in no way interfere with the Naval school, or *vice versa*, as six new school 'buses, fitted with 60 h.p. Le Rhône engines, have been turned out at the works, whilst additional instructors have also been obtained. We wish this second edition of the first aviation school in Great Britain every success.

IN PARLIAMENT—THE DEFENCE OF LONDON.

IN the course of a speech in the House of Commons on September 15th, Sir H. Dalziel asked whether the Admiralty were satisfied with the aerial defence of London. Were they satisfied that the guns were of the right kind, that they were powerful enough, that the men in charge were fully qualified for the responsible task which had fallen on them? Why on a recent visit of Zeppelins to London were no aeroplanes apparently called into requisition? He understood there were plenty waiting. Had the Admiralty made a definite study of the defences of Paris, against which flying machines seemed to have been unable to make any headway? Who was in charge of the aerial defence of London before Sir Percy Scott? Sir Percy Scott's appointment had, he thought, been received in all quarters with great satisfaction, but he could not understand why it was necessary to wait until the Zeppelins had visited London before calling for Sir Percy Scott's advice. His appointment did not mean that if the present system was imperfect it would immediately become perfect. He supposed the whole question was the provision of the proper gun. Too much must not be expected till Sir Percy Scott had had time to review the whole situation, and probably to secure the guns which would be required.

Mr. Balfour (First Lord of the Admiralty): The right hon. gentleman who has just sat down made a pointed and perfectly legitimate appeal to me to say something about the defence of London. He asked me questions about the guns, the provision of guns, the character of the guns, and their sufficiency in point of number, and their sufficiency in point of quality, and he also asked me various questions about the organisation of the defence of London, which, as he truly observed, is not a thing which can be brought to perfection merely by appointing officers. In order that the House may really judge of the situation fairly, they must remember that nobody foresaw, when the war broke out, the full development of aerial war, whether on our own part or on the part of our opponents. This is a branch of war which has never been tried before, and on which there has been no experience until this war which counts for anything, and, therefore, it is inevitable when you have to deal with a situation of that sort, that before your eyes the situation changes, and the organisation which those responsible before the war might naturally have thought adequate is proved by experience to be quite inadequate.

Take this case of the defence of London. In the first place, we may be asked why the Admiralty has got to defend London at all! It is a question on which I have no personal knowledge. I found, I frankly admit to my surprise, that when I took over the Admiralty I was also responsible at the same time for something which seemed to have either no connection at all, or only the remotest connection with naval work. It is a paradox unquestionably. If we had set to work, let us say, three or four years before the war with a full knowledge of the development of aerial warfare; if the Government of that day had set to work with that knowledge to organise the defence of London, I have no doubt it would have been organised on lines different from those which now prevail, but you really ought not to criticise the Minister then in charge, because it is not done. That is not a fair way to look at human effort. The Naval Aerial Service has, I think, quadrupled since the war commenced—I rather think I am under the mark in saying that. An organisation which might have been adequate and was adequate when the war broke out, and responsibilities seemed relatively slight in regard to the defence of the internal parts of the country, gradually became more and more inadequate, and has been supplemented, and is still in course of being supplemented, day by day. I hope the organisation intended to meet this danger is improving, and is growing far more rapidly than the danger itself. That is my hope and my expectation.

The right hon. gentleman dwelt, and is quite right in dwelling, upon the question of guns. Guns have been the great difficulty. You cannot get guns simply by saying that you are prepared to order them, and are prepared to pay for them, and that you know the type of gun you want, and that all that you desire is that they should be made as quickly as possible. I believe the whole question of designing guns to meet aerial attack did attract the attention of those responsible some considerable time before the war. The type of mounting was new, and it required a great deal of experimental work to be carried out upon it. When war broke out, although much had been done in the way of preparation, the actual number of guns was not very great, and they have not come in very fast, compared with all the work which they are called upon to do. Let it be remembered that, under modern conditions, the Navy has not merely, in regard to aerial craft, to defend the inland parts of the country, which, as I said before, are rather anomalous functions to be controlled by my particular Department, but it has to defend its ships, obviously, against aerial attack, which is now one of the recognised forms of maritime warfare. That means that for all your ships you require anti-aircraft guns. It means that the

strain thrown upon the supply of anti-aircraft guns is very great, and unquestionably at the present time the supply has not reached the crest of the demand. It is improving, as the supply of all other munitions is improving. I do not pretend for one moment that it is in a position to which I should desire to see it.

The right hon. gentleman asked why Sir Percy Scott, whose appointment he is good enough to approve, was not appointed before. The answer to that is really the answer to all this particular class of attack. There are things which were foreseen before the war, there are things which were not foreseen, and which I do not think could have been foreseen before the war. One of them was the peculiar development of this method of warfare. The appointment of Sir Percy Scott is not the only great change of organisation which it has been found necessary to effect in consequence of the development of aircraft warfare. I now find it absolutely necessary to bring the whole air service more into harmony with the general practice of the Admiralty, to greatly increase the staff at the head of affairs, and to make arrangements to deal with the enormous amount of work which is now thrown upon those responsible for the air service. The naval air service is now an immense service. The number of flyers is very great and the number of machines is very great. There are responsibilities as regards the design of machines. There are responsibilities for arranging the whole system of coast defence, and the organisation which was not inadequate when the war broke out I found completely inadequate soon after I assumed responsibility as First Lord of the Admiralty. I hope, as regards the organisation, that it is now either complete or in a fair way towards completion. The changes have been very great, and they have all been in the direction of fitting the office to deal with new and great responsibilities, and I hope as time goes on their adequacy will more and more make itself felt.

If the right hon. gentleman asks me whether I think that at this moment everything has been done that can be done or will be done for the defence of London, I do not think so. I think the thing is still in progress, and still in process of development. If he asks me whether I think it possible within a reasonable time to provide an adequate defence of London, I should give him a much more reassuring answer. Let me frankly say I should give him a more reassuring answer, in no small degree because I have a great belief in the organising capacity and the energy and resource, the openness to new ideas, which has always characterised the distinguished Admiral who now has the defence of London immediately under his control.

The right hon. gentleman mentioned Paris. Pains have been taken to make ourselves acquainted with the methods of the defence of Paris, and much, no doubt, has been learned, and will be learnt, from studying their example. But let not the House be carried away with the idea that the problem of London is identical with the problem of Paris. I am sure the right hon. gentleman does not fall into that error. Nor, if I may say so, is the problem of one who has got to try and defend London at all similar to that of the Minister who has to try and defend Paris. Paris starts with being under a single military Government, and it starts with being a great military fortress, and therefore being a military fortress it is supplied with a great mass of guns and with great defensive arrangements. London is not a fortified town. London is, as everybody knows—and nobody knows it better than the Germans—a city which should not, under the laws of civilised warfare, be the subject of this kind of attack. But we take our enemies as we find them.

We perfectly recognise that a nation which is prepared for any degree of brutality at sea is not likely to show undue humanity when it comes to deal with land. Therefore, we do not for a moment suppose that London, or any other undefended place in this country, is to derive more consideration from the laws of humanity or the laws of nations. But I hope and believe, although I cannot promise immunity from attack to any part of the United Kingdom—in war immunity from attack can be rarely promised by any responsible Minister or General—but I think I can promise the House that everything is being done to develop and to organise such defences as are possible against aerial attack. I think I can tell the House, without being unduly optimistic, that, lamentable as have been the result of these German attacks on undefended places, the actual number of persons killed and injured, and the actual amount of property destroyed, has been relatively insignificant, although the hardship inflicted on particular individuals has been tragic beyond expression. If you turn your eyes away from the cases of individual hardship, cruelty, and suffering, and consider simply how much injury to this country, either as a great economic unit or as a great fighting force, has been done by these aerial attacks, I can truly say that, so far, that damage has been insignificant, and, although immunity cannot be promised for the future, I have every hope that Sir Percy Scott and all the other naval authorities who are devoting their minds to this problem will be

able to diminish the dangers in the future, to increase the security, and to enable his Majesty's lieges to sleep comfortably in their beds.

But do not let us ask too much, either of Sir Percy Scott, or the aircraft section of the Admiralty, or of the guns, even when they come in in sufficient numbers. I do not promise this House—I do not promise the country—that there will not be a continuance of these raids, and that on the occasions when they succeed there will not be suffering and injury inflicted upon a certain number of innocent individuals. But if anybody suggests that the nerves of the country are going to be shaken, if anybody suggests that we are looking with national alarm upon this prospect, if anybody suggests that these methods of terrorism are going to have the smallest influence one way or another—except it be to make the flame of righteous indignation burn hotter within us—then I say they are

mistaken. Those are not the sentiments with which our countrymen are going to regard these enemies' attacks, whether legitimate or illegitimate. I look forward to the future with perfect serenity so far as real injury to the country is concerned, and so far as sufferings to individuals are concerned, I have every hope that the efforts of the Admiralty may lead to a great and salutary diminution of any danger which may now be anticipated.

Sir A. Mond said he was sure the House had heard with great pleasure the statement of the right hon. gentleman with regard to aerial attacks. This form of warfare was so novel, and its improvements were so rapid, that no one could blame him or his department if our arrangements were by no means perfect. What they were concerned with was not so much immunity from attack as some certainty of doing damage to the enemies' aircraft when they came over here.

BRITISH FLYERS OVER GALLIPOLI.

THE following extracts from an article by Mr. Arthur Ruhl, the American correspondent with the Turkish Army, give a glimpse of the work of the British flying officers as seen from the enemy's side:—

"Several flyers were creeping about far up against the blue, looking for just such hidden batteries as that which kept barking behind us, and out in front and to the right came the low *Br-rum-m!* of heavy guns. . . .

"I awoke shortly after daylight, thinking I heard an aeroplane strutting in the distance, and was drowsily wondering whether or not it was fancy, when a crash echoed up the valley. We both hurried out. It was sunup, a delicious morning, and far up against the southern sky the little speck was sailing back toward the west. There was a flash of silver just under the flyer—it was an English biplane—and a moment later another crash further away. Neither did any damage.

"A few minutes later we were looking at the remains of the bomb and propeller-like wings, whose whirling, as it falls, opens a valve that causes it to explode on striking its mark. Until it had fallen a certain number of metres, mere striking the ground would not explode it—a device to protect the airman in case of accident to his machine or if he is forced to make a quick landing.

"In the fresh, still morning, with the camp just waking up and the curious Turkish curry-combs clinking away over by the tethered horses, our aerial visitor added only a pleasant excitement to this life in the open, and we went on with our dressing with great satisfaction, little dreaming how soon we were to look at one of those little flying specks quite differently.

"Finally we went aboard a sort of enlarged tug which might be going up that afternoon or evening.

"It was about midday. The sun blazing down on the crowded flat; on boxes, sacks, stevedores wrapped up in all the variegated rags of the East shuffling in and out of the ships; on gangs digging, piling lumber, boiling water, cooking soup; officers in brown uniforms and brown lambswool caps; on horses, ox teams, and a vast herd of sheep, which had just poured out of a transport and spread over the plain, when from the hill came two shots of warning.

"The gangs scattered like water-bugs when a stone is thrown into the water. They ran for the hill, dropped into trenches; to the beach, and threw themselves flat on the sand; into the water—all, as they ran, looking over their shoulders to where, far overhead, whirled steadily nearer that tiny, terrible hawk.

"A hidden battery roared, and—pop!—a little puff of cotton floated in the sky under the approaching flyer. Another and another—all the nervous little batteries in the hills round about were coming to our rescue. The bird-man, safely above them, drew on without flinching. We had looked up at aeroplanes many times before and watched the pretty chase of the shrapnel, and we leaned out from under the awning to keep the thing in view. 'Look,' I said, 'she's coming right over us!' And then, all at once, there was a crash, a concussion that hit the ear like a blow, a geyser of smoke and dust and stones out on the flat in front of us. Through the smoke I saw a horse with its pack undone and flopping under its belly, trotting round with the wild aimlessness of horses in the bull ring after they have been gored. Men were running, and, in a tangle of wagons, half a dozen oxen, on the ground, were giving a few spasmodic kicks.

"Men streaked up from the engine-room and across the wharf—after all the wharf would be the thing he'd try for—and I found myself out on the flat with them just as there came another crash, but this time over by the Barbarossa across the bay. Black smoke was pouring from the Turkish cruiser as she got under way, and,

with the shrapnel puffs chasing hopelessly after, the flyer swung to the southward and out of sight.

"Officers were galloping about yelling orders; over in the dust where the bomb had struck a man was sawing furiously away at the throats of the oxen (there were seven of them, and there would be plenty of beef in camp that night, at any rate); there was a dead horse, two badly wounded men, and 100 ft. away a man lying on his face, hatless, just as he had been blown there; dead, or as good as dead.

"It appeared that two airmen had come from opposite directions and most of the crowd had seen but the one, while the other dropped the bomb. It had struck just outside the busiest part of the camp, aimed very likely at the stores piled there. It had made a hole only 5 or 6 ft. wide and 3 or 4 ft. deep, but it had blown everything in the neighbourhood out from it, as the captain had said. Holes you could put your fist in were torn in the flanks of the oxen, and the tyres of some of the wagons, 60 or 70 ft. away, had been cut through like wax.

"With a curious sense that the bottom had somehow fallen out of things—even the blue above was treacherous—and that one of those things which only happen to other people not only could, but was going to, happen to us right here and now, we watched the men go back to work and the afternoon wear on. We even went for a swim.

"At every unexpected noise one looked upward, and when about 5 o'clock the crowd scattered again, I will confess that I watched that little speck buzzing nearer, on a line that would bring him straight overhead, with an interest considerably less casual than any I had bestowed on these birds before. There we were, confined in our little amphitheatre; there was that diabolical bird peering down at us, and in another minute, somewhere in that space, would come that earth-shaking explosion—a mingling of crash and *whouff!* There was no escaping it, no dodging it, nothing to get under but empty air.

"I had decided that the beach, about a hundred yards away from the wharves, was the safest place and hurried there; but the speck overhead, as if anticipating me, seemed to be aiming for the precise spot. It is difficult under such circumstances to sit tight, reasoning calmly that after all the chances of the bomb's not landing exactly there are a good many to one—you demand at least the ostrichlike satisfaction of having something overhead. So I scurried over to the left to get out from under what seemed his line of flight, when what should he do but begin to turn! This was really rubbing it in a bit. To fly across as he had that morning was one thing, but to pen one up in a nice little pocket in the hills, and then on a radius of three or four thousand yards circle round over one's head—anything yet devised by the human nightmare was crude and immature to this.

"Was it overhead? No, behind, but it was travelling at 50 or 60 miles an hour, and the bomb would carry forward—just enough probably to bring it over; and if over, still the bomb would be several seconds in falling—it might be right on top of us now! Should we run backward or forward? Here was a place, in between some grain bags. But the grain bags were open toward the wharf, and the wharf was what he was aiming at, and a plank blown through you—No, the trench was the thing, but—Quick, he is overhead!

"The beach, the bags, the ditch, all the way round the camp, was ever anything more inglorious? Somewhere in the middle of it a hideous whiffing wail came down the sky: *Trrou trrou trrou!*—and then a crash! The bomb had hit the water just off the end of the pier. I kept on running. There was another *Trrou trrou!* another geyser of water, and the bird had flown on."

AIRCRAFT AND THE WAR.

AN Exchange message from Athens on September 12th stated :—

"It is reported from Mitylene that a British gunboat yesterday bombarded Aivali at two points where Turkish volunteers were camped. Ten were killed. At the same time one of the Allies aeroplanes flew over the town and dropped bombs, destroying the barracks and killing 17 soldiers."

The following message was sent from Paris on September 12th by the Exchange Co.'s correspondent :—

"Yesterday's *communiqué* spoke of the capture of an Aviatik at Hangest-sur-Somme. The details are as follows :—

"In this village on the Somme an aviator was seen manoeuvring as in doubt as to his route. He went about several times, and then plunged to earth near the high road. Two dragoon orderlies happened to be riding by, and when they reined up near the air-machine they found pilot and passenger trying with difficulty to explain to some children that they had got lost, and were anxious to find the way to somewhere. When they saw the French uniforms they at once raised their arms, crying : 'Kamerad ! Kamerad !' But the two dragoons took them triumphantly to the nearest gendarmerie."

The *Echo Belge* announced on the 15th inst. that an Allied aviator again bombed Ghent at five o'clock on the previous Sunday afternoon. The German artillery fired upon him. His objective was an important cotton factory, and his expedition completely succeeded. Six bombs fell directly on the factory, which was entirely destroyed by fire. There were, it appears, two score German soldiers killed and wounded.

A Central News message from Amsterdam on the 16th inst. stated :—

"German airmen report that Riga has the appearance of a great artillery park. As soon as a German airman is sighted flying near the town hundreds of guns open fire upon him, and it is now almost impossible to drop bombs on Riga, or even to reconnoitre with any success."

"It is learned also that Russian airmen have dropped bombs on Warsaw, but no details can be ascertained as to the damage caused."

In an interview with the special correspondent of the *Petit Parisien* at Nish last week, M. Pasitch, the Serbian Premier, referring to the reported concentration of enemy troops on Serbia's northern frontier, said :—

"As a matter of fact, no enemy army has been massed on the Danube, and to prove the accuracy of this statement we have the constant and detailed reports of the French aviators, who are rendering such invaluable services."

The Central News correspondent in Northern France, writing on the 15th inst., said :—

"The Germans are giving proof of growing alarm at their inability to stem the French advance in Alsace, and at the frequent air raids by the French."



LIGHTER THAN AIR.

Limelight.

HAVE you heard the story of the leading actor-manager who was watching the searchlights playing on the Zeppelins which flew around London the other night? The beams seemed to him to be ill directed, and he was observed to grow more and more uneasy as they increased in volume and intensity. Suddenly, looking up at the light which was projecting its effulgence afar, he exclaimed "No ! no ! All wrong !" Then, banging himself on the chest (to indicate the correct spot), he shouted, "Here ! HERE !"—"Carados" in the *Referee*.

A "Sell" for the Zeppeliners.

THERE is a good slice of reasoned philosophy in the following explanation given by a woman to the magistrate of the West London Police Court, in regard to her conduct last week : "I gave myself up," she said, "because I thought I should be safe in the cells if any Zeppelins came. I was not really drunk."

Lights—to be or not to be.

"You must not show a light on the front," said a special constable at the seaside to a visitor who was striking a match.

According to the Central News correspondent at Petrograd, a wounded German officer, taken prisoner to Kieff, said :—

"A short time ago some Russian aviators at Sokal exploded with their bombs a German store of explosives and a reservoir of asphyxiating gas."

Local papers give the following information regarding the recent French raid on Treves :—

"From fifteen to twenty Frenchmen took part in the attack, and threw about thirty bombs, apparently aiming at the station. One bomb hit the platform and wounded a postman. Ten bombs exploded in one street. A service was going on in the cathedral, and the clergy proceeded to the crypt, where prayers were said until the danger had passed. The French airmen flew at a great altitude so that the anti-aircraft guns could not reach them. The raid took place at eight o'clock, and at noon some airmen returned to observe the damage done by the raid."

The *Daily Mail* correspondent at Copenhagen, writing on the 17th inst., said :—

"German waterplanes have been stationed near the Sound. Sweden is reported to be considering the conveying of her merchant ships."

Reuter's correspondent in Petrograd, writing on the 17th inst., regarding the situation in Vilna, said :—

"The latest letters from the city state that the cannonading is heard uninterruptedly day and night, and bomb-dropping Taubes and Albatrosses are constant visitors."

The following attack by French aviators upon a German troop train was sent by Reuter's correspondent on the 18th inst. :—

"Telegrams from Switzerland describe the daring raid made by two French aviators on the railway going from Donaueschingen to Villingen, in the Grand Duchy of Baden."

"Eye-witnesses relate that the airmen, sighting a troop train while they were manoeuvring at a very low altitude, swooped down to within 12 to 15 feet of the ground. One flew on the right of the line and the other on the left alongside the train, and opened fire with machine-guns through the windows of the carriages upon the Germans, who were powerless to defend themselves."

"The German authorities evidently considered that there was no risk of a raid at a point so far from the frontier, for there was not a single cartridge among the troops. Again and again the aviators flew up and down the train, killing the stoker and many soldiers. Others jumped from the train while in motion, and flew for shelter. The attack ended at Marbach Junction, where the raiders fired into the ranks of the German soldiers drawn up on the platform, causing heavy loss."

An Exchange Telegraph Co.'s message from Athens on the 18th inst. stated :—

"A French aeroplane on Thursday flew over Adana and dropped two bombs, killing two Turks and wounding two others. It afterwards bombarded the railway bridge over the Pyramus, without result."

"Show me the order against it," said the visitor, and the special fished a paper out of his pocket, and obligingly switched on an electric torch almost as bright as a searchlight so that the disbelieving stranger could read it.

A propos the above incident, I read in a country paper the other day of a coster who, when charged for not showing a light, plaintively remarked, "If I carries a light the policeman says put it out or I'll run you in, and if I don't carry it he runs me in for not carrying it. What am I to do?" The magistrate (one of the great unpaid) said : "Pay five shillings."—"Mr. Gossip" in *Daily Sketch*.

ÆTAT 10 : "Uncle, if the end of the world was to come, and it was destroyed while you were up flying, where would you land when you came down?"—*London Opinion*.

Charivaria from Punch.

LONDON'S new watchword : "Scott strafe Zeppelin."

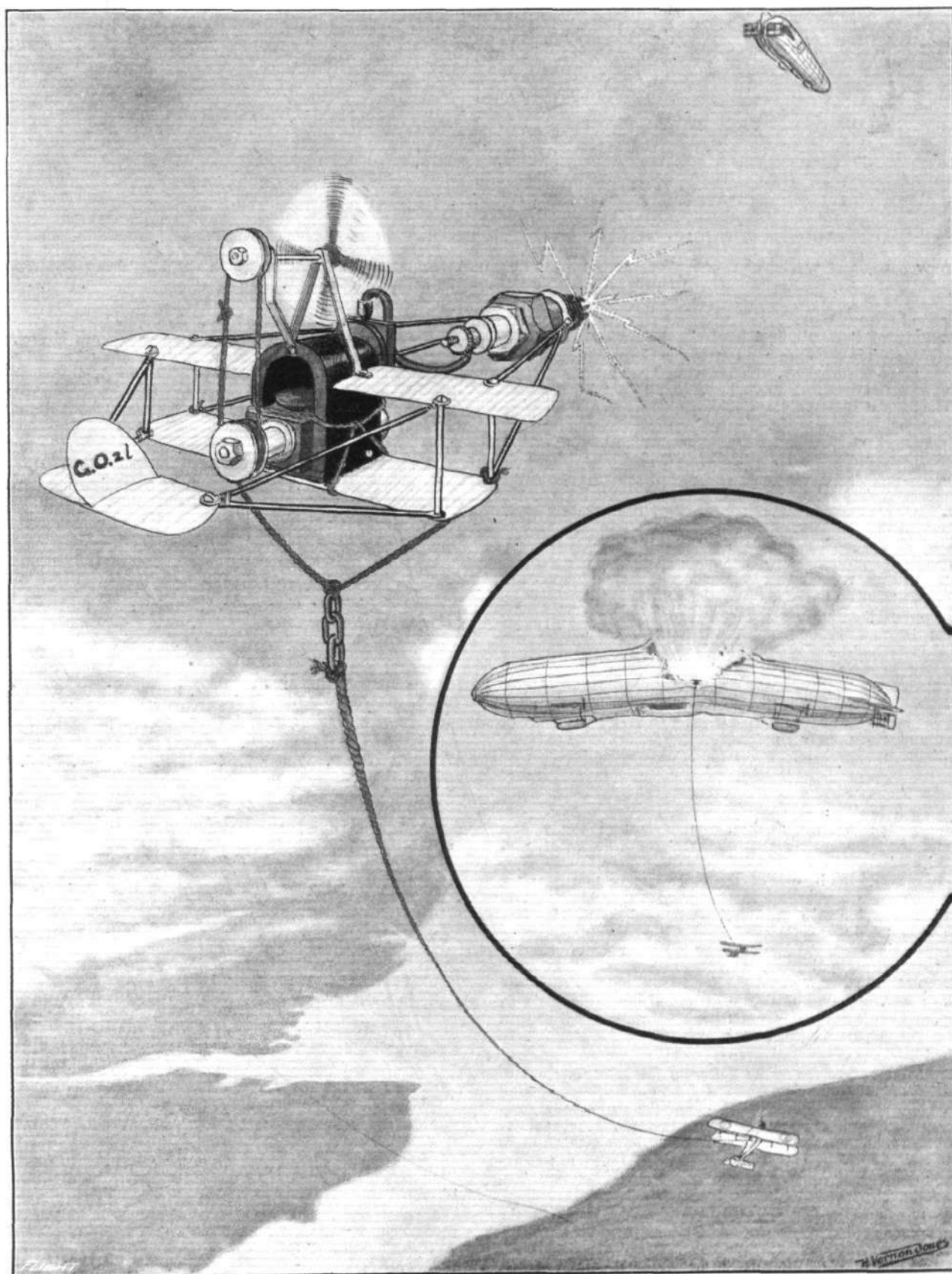
WE hear that a dear old lady, who had a Zeppelin pass exactly over her house, has taken the precaution of staying indefinitely with friends two doors down the road.

ONE of our most consistent admirers is an old anti-bellum negro, William, who is known locally as a "character." William likes to explain all the details of flying with actual volubility and assumed wisdom. Quite recently, an over-dressed woman of pompous and dominating mien came to look the flying boat over accompanied by a rather pretty but timid girl, evidently her daughter. After inspecting the boat and subjecting our humble

self to an insolent scrutiny the woman addressed William with Southern familiarity as follows:

"William, do you think it is safe to trust Elsie to go for a flight with this aviator?"

"Yas,—siree,—marm—," replied the old negro, "Marse Beech, done hab bofe hands accipied on dem levers all de time."—*Aerial Age.*



ZEP.-"STRAFING" DEVICES, By "FLIGHT'S" Tame Inventor.
No. 2.—The Bosch-Boche-Ignition kite.

